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THE NEW PSY TRY.

Delivered before the Royal College of ns of Edinburgh on March 8th, 10th, and 15,

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F.R.C.P. LON
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ABSTRACT OF LECT I.[1]

(*Delivered on March*

MR. PRESIDENT AND GENTLE -Another important psychological mechan which often serves as an indicator of repres omplexes, not only in nervous disorder, but als everyday life, is "projection." The peculiarity o phenomenon is that the effects of the repre complex are attributed by the individual pos ing it not to himself, but to some other person. few examples will explain my meaning. Peop ho are guilty of some failing, imperfection, weakness, of which they are ashamed, are exce ngly liable to attribute the same fault to others. a thief loses an article his first thought is tha somebody has stolen it from him, and the man w is ever ready to disbelieve any statement made t him is himself a person who is habitually economi l of the truth. The dishonest financier is always o the alert lest somebody should swindle him, and h is exceedingly intolerant of anybody who succeeds in doing so. The man who is unfaithful to his wife is usually suspicious that she may have been unfaithful to him, and how often have we all heard an asylum patient declare that his wife is insane, or a drunkard accuse his consort of insobriety. Self-reproach is so unpleasant to consciousness that it is repressed and sublimated into reproach of other people.

THE NEURONS.

I now propose to discuss various matters that have been elucidated by psycho-analytic methods respecting the neuroses, psychoneuroses, and psychoses. Freud recognises two neuroses proper—viz., neurasthenia and the anxiety neurosis. Probably a few cases of hypochondriasis are due to the same etiological factors as thes euroses and should therefore be included in the sa e group.

Neurasthenia.

Neurasthenia is a term which hith to has been used very loosely, and the separation o the anxiety neurosis as a distinct disease is due to the clinical insight of Freud. The term "neurasthe ia" is now limited to a class of case which ex ibits very definite symptoms, the chief of which an undue tendency to fatigue. This is well demo strated in ergographic tracings from neurasthen patients. In a normal person such tracing show a gradual increase of power at the beginning of the e periment so that the lever rises more and more ith each successive contraction. This is ascribed to he effect of practice. Subsequent contractions emain at the same level before fatigue sets in, when the level rises less and less until, the finger becoming absolutely useless, the tracing becomes a straight line. With a neurasthenic, on the other hand, the initial increase of power due to the effect of practice is not shown. The first few contractions may be of an average height, but fatigue sets in immediately and the contractions become weaker and weaker. The same phenomenon is shown in experiments devised for the purpose of investigating the laws of mental fatigue. In Weygandt's method, for instance, the patient is given a sheet of paper with columns of figures to be added. He starts at the first column and at the end of a minute writes down his result so far as he has gone. Then he passes to the next column, adds for a minute and puts down the result as before, and so on through the whole series. In a normal person at first the effect of practice is noticeable, in that the added portions of the column get longer and longer until, fatigue setting in, they grew shorter and shorter. In the neurasthenic, on the other hand, the added portions shorten from the very first. Mistakes in the addition also occur earlier than in a normal individual. The so-called "irritable eye" exemplifies the muscular fatigue, the patient complaining that the eyes ache on reading for a short time, although no error of refraction can be found. Examination with the perimeter soon fatigues the retina and, unless carried out quickly, the visual field will be found contracted or spiral.

These patients are anxious enough to be busy about their affairs like other people; but all effort, mental or physical, leads to an intense feeling of fatigue. In many cases, even the thought of doing anything causes the patient to tremble and to break into a profuse perspiration. Other symptoms are a sense of pressure on the top of the head, often localised to one spot on the left of the middle line, and various paræsthesias, especially of the joints and muscles and the back of the head over the occipital spine. The last is explained as a "crawling" or "screwy" sensation and was aptly described by one patient, whose case was related to me, as a feeling as if there were a blackbeetle inside the skull lying on its back and kicking to get on its legs again. Feelings of abdominal discomfort also occur and there may be hypochondriacal notions respecting the genito-urinary apparatus. Similar symptoms frequently occur in states of general debility, such as chlorosis, and in the early stages of organic nervous disease such as disseminated sclerosis or general paralysis. In these conditions the case should, of course, not be labelled "neurasthenia"; but when the above symptom-complex occurs independently of any other disease, then we have to deal with a case of true neurasthenia. In all cases of this kind, without exception, there is always to be found one essential etiological factor—viz., sexual excess. In the majority of cases this takes the form of masturbation, but in a few patients the disease is traceable to frequent nocturnal pollutions, and I have come across a still smaller number of neurasthenics who, being habitual roués, owe their neurosis to excessive indulgence in normal sexual intercourse. Such cases differ in recovering easily and rapidly as soon as the cause of their malady is explained and removed. Suitable advice and recommendations as to mental hygiene are the proper remedy; but it is often necessary to carry out a certain amount of psycho-analysis in order to trace and uproot the complexes which constitute the foundation of such irregular sexual impulses.

The Anxiety Neurosis.

The "anxiety neurosis" is characterised, as its name implies, by a persistent state of anxiety or fear, usually without obvious cause, but sometimes initiated by some real cause for anxiety. This state is always out of proportion to its cause, and

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the other symptoms of the neurosis are exaggerations of the normal physical signs of fear. Such are irregularity and an increased frequency of the pulse, palpitation, anginal attacks, general vasomotor constriction with coldness and blueness of the extremities, dryness of the mouth, perspiration (especially of the hands), polyuria, diarrhœa, respiratory oppression and air hunger, even attacks of asthma, vertigo, tremor, attacks of ravenous appetite, nausea and sometimes actual vomiting, night terrors and insomnia, hyperæsthesia for visual impressions and especially for noises, and a general apprehensiveness. Such patients are liable to exacerbations of their various symptoms in which the feeling of terror may be extremely severe with a feeling of congestion in the head and a dread of impending death. It is even said that there may be temporary loss of consciousness, but I have not seen such a case.

Freud and all who have subsequently investigated the matter are agreed that the anxiety neurosis owes its origin to an accumulation of mental excitement which finds no somatic outlet, and, further, that this excitement is almost always, probably always, of a sexual nature. Accordingly we meet with this neurosis among engaged couples who cannot afford to get married, in widows and widowers, in women whose husbands practise coitus interruptus (this is the commonest cause), in women during the climacteric whose husbands have reached senility, and in patients who with great effort have renounced masturbation. There are other important contributory factors. Heredity is one, and the condition also arises from overwork and exhaustion, especially after severe illness and prolonged watching by the bedside of a sick relative by night as well as by day. Unfortunately the obvious remedy for such a neurosis is usually impracticable, and it is my custom in these cases to seek by means of a short analysis interests of the patient into which his repressed energy may be directed (sublimation of the sexual impulse) and, in the meantime, to prescribe some anaphrodisiac medicine, my favourite mixture for such purposes being a combination of camphor with the extract of black willow.

The Psychoneuroses and Psychoses.

The psychoneuroses and psychoses are on an entirely different plane from the neuroses. The neuroses, as we have seen, owe their origin to existing causes, probably of a chemical nature, at the time of the malady, but the psychoneuroses and psychoses are compromise formations between repressed wishes and the forces which repress them; that is to say that their mechanism is exactly the same as that of dreams. The obvious differences between dreams and the psychoneuroses are that in the one the subject is asleep and desires to go on sleeping, while in the other he is awake; and also that dreams are normal while psychoneuroses are abnormal.

[Dr. Stoddart here illustrated by the imaginary case of a younger step-sister unfairly subordinated to the rest of the family, how the different endings possible to the well-known story of Cinderella might produce ideas of persecution or dementia præcox or hysterical paraplegia.]

Hysteria.

Freud's theory of hysteria depends on the recognition of the infantile development of sexuality. Events occur during childhood which at the time have no sexual significance, but the recollection of them after ma [illegible] disproportionately exciting because puber [illegible] the meantime incomparably increased the [illegible] g capacity of the sexual apparatus. T [illegible] nscious infantile memories influence the [illegible] exual life of the individual and may be [illegible] rming cause of masturbation. Such hy [illegible] ates are subconscious rather than unconsci [illegible] ifestations of hysteria. Sometimes, howeve [illegible] antasies or memories assume an unconsciou [illegible] and then we have the so-called hysteric [illegible] ks. These consist of a series of emotional d [illegible] which are rendered comprehensible when [illegible] hysician has discovered the underlying tho [illegible] or he is then able to see that such emotiona [illegible] ifestations are such as might be expected t [illegible] ur in response to the given stimulus.

Lastly, we h [illegible] "conversion hysteria" which results from [illegible] rsistent strife between some painful memor [illegible] d the restraint of the censor from its comin [illegible] the surface, the result of the struggle being [illegible] mpromise whereby the idea by distortion beco [illegible] converted into a somatic symptom, some bod [illegible] motor or sensory innervation or inhibition.

Psycho-analys [illegible] is to be regarded as the most radical form of [illegible] reatment of hysteria and other functional men [illegible] disorders to be presently discussed, but I mi [illegible] t here refer to other methods in common use. W [illegible] ir-Mitchell's "rest-cure" is quite fashionable at [illegible] e present time and undoubtedly gives good resu ts in many cases, provided it be used rationally and in combination with some psychical influe ce at the same time. Suggestion is most common y used, and Weir-Mitchell's private opinion of the whole procedure was that it acted mainly as a suggestive agency. The prolonged mental and physical rest are beneficial, the removal from home surroundings has the advantage of withdrawing the patient from an environment which has usually proved somewhat irritating, the massage and possibly the electricity tend to improve metabolism, and the over-feeding is well suited to patients who are ill-nourished. Let me say at once, however, that this method is worse than useless in any other condition than hysteria, and even in this disease failures are far from uncommon. Moreover, the expense is often as great as in psycho-analysis.

Hypnotism ay be employed with advantageous and often dra tically successful results in hysteria. Hypnosis is uch more easily achieved in this disease than [illegible] other mental disorders, and it may be used in on [illegible] of three ways: (1) to get the patient into an ext mely suggestible mood so that suggestion of r overy may be given; (2) to recover buried mem ries; or (3) to get the patient to react emotionally o buried memories.

The Compulsion Neurosis.

The com ulsion neurosis is a disease which shows itse in a large number of ways. The patients ha e a clear intellect and good memory, and they a e well orientated in time and place, but they suffe from mental symptoms into which morbidity hey have a clear insight. They suffer from irre ressible thoughts which often take the form of metaphysical questionings such as "When was the beginning of all things?" "What existed before that?" "Who created God?" or they attach undue importance to superstitions; or they cannot help repeating in their minds things they have heard. Many suffer from morbid fears or morbid irresistible impulses. Some of these patients have feelings of *incompleteness* in action, in intellectual problems, in emotional reaction, and in perception. Others have strange feelings of unreality and of depersonalisation, called by Janet psycholeptic crises. Formerly this condition was called "obsessional insanity," a term which was justifiable in that it offered no explanation. The mind is obsessed or besieged by such thoughts, fears, or impulses. Janet advanced a step by recognising what he called a "splitting of consciousness" or "mental dissociation" induced by a "lowering of the psychological tension," the psychical response of a psychasthenic to his environment being inadequate. Freud regards the compulsion neurosis as a disease of the unconscious, and as having a purely sexual basis, regarding the symptoms as substitutions for certain repressed sexual ideas and emotions.

[Dr. Stoddart here discussed Freud's views and those of Dr. Ernest Jones, concluding that psycho-analysis has proved to be the only really successful method of treating the compulsion neurosis, but hypnotism may be used in much the same way as for hysteria—viz.: (1) for suggestion, (2) to recover buried memories, and (3) to obtain an emotional reaction to a repressed complex. He briefly discussed other modes of treatment, and continued:]

Maniacal Depressive Insanity.

Maniacal depressive insanity is a disorder in which the patient is liable to attacks of mania, melancholia, or stupor, these being in some cases accompanied with or replaced by some delusional state. It is useless to attack this psychosis while the patient is passing through one of these acute phases of the disorder. Radical treatment of the disease must be undertaken during a period of sanity or, as the populace would say, during a "lucid interval." It is interesting, moreover, that psycho-analysts, who have had experience of these cases, have come to the conclusion that a very short analysis is most successful in effecting a cure, while a complete analysis, in the Freudian sense, only leads to relapse, but, as I said before, many psycho-analysts of experience differ from me on this point.

Dementia Præcox.

Dementia præcox has been most carefully studied by Jung from a psychological point of view, and the conclusion at which he arrives is that there is a remarkable psychological resemblance between it and hysteria. The complexes and the mechanism of their repression are exactly the same, yet hysteria is an eminently curable disease while dementia præcox is conspicuously incurable. The catatonic symptoms can easily be conceived as purely repressive devices, and it has been definitely proved in some cases that certain stereotyped actions are distorted representations of the fulfilment of repressed wishes; but at the same time we must not lose sight of the fact that these same symptoms also occur in certain organic cerebral diseases whose origin is at least much more organic than psychical. Again, the question is not yet absolutely settled whether dementia præcox is a psychogenic or organic disease. Alzheimer and others have described areas of gliosis in the deepest layers of the cortex, others have discovered fatty degeneration of the nerve cells, others, again, have observed cerebellar changes, all of which might very well be due to excess or defect of certain internal secretions. This idea, surmised by Kraepelin, has been rendered probable by Mott's discovery that certain glands possessing internal secretions, especially the ovaries and testes, are more or less atrophied in dementia præcox. On the other hand, Jung appears to have cured, or at least considerably ameliorated, some cases of dementia paranoides by psycho-analysis only. Jung recognises all these difficulties and gets out of them by supposing that the mental conflicts of dementia præcox give rise to toxins which act deleteriously upon the cerebral substance. I must confess that to me this idea does not appeal very strongly, but Kraepelin, who will have nothing to do with psycho-analysis, is, curiously enough, rather pleased with the suggestion.

The chief characteristic of patients suffering from dementia præcox is that they are living a dream and in the end completely retire from the world of reality (autism). Up to the present very little psychological investigation of the disease has been made, but we hope to learn much from the investigation now going on at Zürich. For the present, therefore, we must regard the pathology of dementia præcox as still undetermined.

Paranoia.

The last disease I must submit for your consideration is paranoia. This is a mental disorder of the fourth or fifth decade as a rule, and it is characterised by the progressive development of systematised delusions. The patients being of a suspicious temperament see hidden meanings in incidents which possess no unusual value for the ordinary man, and from the inevitable accumulation of such misinterpretations they evolve a system of delusions which vary from patient to patient. The cases are divided into two main classes: (1) the eccentrics or mattoids, the borderland cases of insanity, including faddists and cranks of all kinds; and (2) the egocentrics, including patients who suffer from delusions of persecution, jealousy, exaltation, and ill-health (hypochondriacs). All these patients are perfectly clear mentally, have no hallucinations, behave well and can think intelligently apart from their particular delusions, but they are firmly convinced that there is nothing mentally wrong with them, and therefore always feel aggrieved when they are involuntarily placed under care for their malady.

Since the advent of our new psychiatry many patients of the above-mentioned class have been analysed by modern psychological methods all over the civilised world, and the outcome has been the remarkable discovery that paranoia is a psychosis erected on the invariable basis of repressed homosexuality. Naturally enough the idea that a person has homosexual inclinations is usually repugnant to him; he refuses to admit it to himself, and it is repressed into the unconscious. Should such repression fail, the homosexual complex reappears in consciousness in the disguised form of paranoia or, I may add, as dementia paranoides, for it has been shown that the same psychical mechanism is at work in this variety of dementia præcox, designated by Kraepelin in his most recent edition, by the way, as "paraphrenia."

Although psycho-analysis has been successful in elucidating the psychology of this disease the method usually fails as a mode of treatment. I understand, however, that some psycho-analysts have effected a cure and many have alleviated the patient sufficiently to enable him to go about his business with a certain degree of mental comfort without molesting those people with whom he is brought into contact. Recovery is said to have been effected in a few cases of fairly recent origin by a method which somewhat resembles psycho-analysis, but differs from it in that the physician seeks, in the first instance, to obtain a positive transference before tackling the disease itself. He gets the patient to give a complete history of his life, endeavouring meanwhile to discover incidents and characteristics which have a bearing on his delusional state, and to disclose them. During the whole of this process, which takes 20 to 30 hours, he accepts the patient's point of view throughout until he ultimately gains his whole confidence and convinces him of his friendship, without, however, actually encouraging his delusions or agreeing with every word he says. Then, when a suitable opportunity offers, he suggests that the patient may have come to an erroneous conclusion about some quite insignificant occurrence. After a few more sittings, as opportunity offers, he points out another minor occasion when the patient might have been mistaken. So he goes on until he sees his chance for tackling the main delusion and pointing out that even here he may have also been mistaken. The physician takes advantage of any attitude of doubt and completes the cure by "therapeutic conversation." The whole procedure requires an enormous amount of tact, patience, and skill. Moreover, the physician must be familiar with these mechanisms of paranoia which have been discovered by the psycho-analytic method.

CONCLUDING REMARKS.

The main object of these lectures has been to expound the principles of psycho-analysis proper, its technique, the psychological mechanisms which it has disclosed, and the bearing of these mechanisms, not only on many of the patients in the asylums of Great Britain, but also on an enormous number of people pursuing their ordinary vocations in spite of curable mental worries or spending an enormous proportion of their time and income in nursing homes. The physician who will undertake the radical cure of these poor sufferers will earn the gratitude of society as well as that of the patients, which is always unbounded; but he must be a man of courage, for he will have to face the opposition of the "herd" for many years to come. In spite of all we may say, the subject of sex will remain taboo, yet no physician of experience can deny the enormous rôle played by sexual conflicts in the genesis of the neuroses. I do think that cases sometimes occur in which the psychogenetic conflict is non-sexual, but they are so rare that I can see the psycho-analytic literature of the future augmented by reports of such cases as curiosities.

Although I attach so much importance to psycho-analysis, I hope that no words of mine will detract from the systematic investigation of cases by other methods. It would be deplorable, for instance, if attention to psychological investigation should detract from the work of the clinical laboratory and thus allow a positive Wassermann reaction, so common in dementia præcox, for example, to be overlooked.

It has often been said that the frequency of mental disease is due to the effect of civilisation, to the hurry, bustle, and struggle for existence associated with urban life, to defective sanitation, insufficient sleep, overwork, poverty, brain-fag, education, and a host of other things incident on civilisation. With all our modern conveniences, the Poor-law, hygienic surroundings, hospitals, comfortable railways with restaurant cars and sleeping accommodation, typewriters and telephones, such a view is manifestly erroneous.

That insanity is the result of civilisation is obvious to anybody who looks the facts in the face; but psycho-analysis has revealed that the essential factor is not hurry, bustle, and brain-fag, but the repression of the instincts enforced by civilisation.

It is not to be supposed that the prophylaxis of insanity lies in letting loose the reins of licentiousness and depravity. The problem is far more intricate than this, and it is not likely that it will be solved in the present century, much less in our own time. The mystery at present surrounding sex and birth problems must be removed by systematic education of the young in such matters, early marriage must be made more possible than existing circumstances will permit, and old men and parents will have to remember the days of their own youth when they enact the laws which are to govern society. Moreover, the whole populace will have to be educated in such matters before any serious change can be accomplished.

CEREBRO-SPINAL MENINGITIS.

WITH NOTES ON TWO EPIDEMICS.

BY E. NORMAN BUTLER, B.A. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.,

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Cerebro-spinal meningitis, or spotted fever, is a disease of great importance to the practitioner, for though nowadays large epidemics are rare in England, the occurrence of the disease in small numbers is frequent in our larger towns. In East Africa the disease has assumed characters so virulent that it is the dread of the native and the bugbear of the employer of native labour. This is not surprising, for in 1913 it killed, in one tribe, numbers variously estimated at 20,000 to 40,000.

It is a curious feature of the disease that there are places in East and Central Africa where it is always endemic and seldom epidemic, as, for instance, Uganda in general and the coast town of Mombasa, whilst in the highlands of British East Africa the endemic form is not often seen, and when the disease occurs it is usually in the form of an epidemic of greater or less virulence.

In the second of the epidemics to be here described the persons involved were natives of Uganda and the borderland between British East Africa and Uganda, who were brought down to the coast to act as military porters in connexion with the campaign against German East Africa. Whilst in Mombasa three or four cases of a clearly sporadic nature occurred, following the usual custom of that town, where amongst the natives post-basic meningitis is of continual occurrence.

First Series.

The first epidemic that came to my notice was of a much milder character than the second; it occurred at almost the same place in the highlands as the second, but amongst natives whose normal habitat more normally approximates to the altitude in which they were then living. In all, I had 8 cases in this epidemic, resulting in 4 deaths and 4 complete recoveries. Besides these a small number of cases occurred amongst natives who were not under my care, and these were treated by Dr. Nicholls.

I must make apology for lack of scientific methods. I have been, all through, unable to obtain a lumbar-puncture needle in this country, and lack of a bacteriological laboratory rendered microscopical examination of pus my only means of investigation of the organism.

As regards the second series of cases—the more important one—scientific observation was rendered even less possible, by reason of the difficulties naturally encountered in such work when it is done in connexion with the transport arrangements of an expeditionary force on active service.

CASE 1A.—Aged about 25. Physique poor. History of sudden onset of pain at the back of the neck and across the shoulders, and severe occipital and vertical headache. On the second day head retraction was marked, but not excessive, Kernig's sign positive; abdominal and epigastric reflexes absent; knee-jerks normal. The plantar reflex, as with all natives, was not obtainable, owing to the thickness of the soles of the feet. On the third day there was purulent conjunctivitis in the right eye, the pus showing a Gram-negative diplococcus with an intracellular distribution. The case showed no further features of interest, and made an uneventful recovery.

CASE 2A.—Aged 20 years. Physique fair. In general the case was almost precisely similar to the last, save that the conjunctivitis affected both eyes, the pus from which showed the diplococcus, and there was a nasal discharge of thick, yellow, creamy pus, which also contained intracellular diplococci. After four days the patient became unconscious, with very marked head retraction, and died on the eighth day. At the necropsy I found thick yellow pus in the pia-arachnoid involving the brain from base to vertex, descending into the greater fissures and all along the spinal cord.

The following is a different type of case showing more severe onset, but proceeding to complete recovery.

CASE 3A.—Aged 15. Physique poor. Onset very sudden with headache and pain at the back of the neck and across the shoulders, followed in about 12 hours by unconsciousness lasting three days, during which he was brought a seven hours' railway journey. He was fed by tube for seven days. Head retraction and Kernig's sign marked. Eventually gradual recovery commenced without any special features, and was complete in about five weeks from the onset of the disease.

The other cases of the same epidemic showed no features of special interest. The two cases that reached necropsy showed post-mortem findings similar to those in Case 2A.

One case that occurred in the same epidemic, in which, though the patient died before I saw him, there is very little doubt of the diagnosis, exemplifies very well another distinct type of the disease. The onset in a native of superb physique was very sudden with pains at the back of the neck and across the shoulders, and severe headache. Unconsciousness supervened in about an hour and a half, and death in six hours. At the post-mortem examination the only macroscopical feature was excess of cerebro-spinal fluid, which was removed from absolute clarity by the nearest possible turbidity. In none of these cases was any treatment, other than symptomatic, adopted.

I was told by my colleague, Dr. Nicholls, of the success of his prophylactic measures of burning down all the natives' huts occupied by those amongst whom his cases occurred, syringing out the nose and naso-pharynx with weak antiseptic of everyone exposed to infection, and causing them all to take a bath in a strong solution of cyllin, and immersing all bedding, clothes, &c., in a still stronger solution. I therefore decided to follow out the same plan of campaign, only instead of burning the huts I pulled them all down and left the corrugated iron sheets of which they were made lying under the powerful African sun for two days, and subsequently had them re-erected on a different site. The bathing of all the natives exposed to infection, together with their clothes, bedding, &c., in cyllin 1 in 400 and 1 in 200 respectively, was carried out, but owing to there being considerably over 500 natives to be dealt with, I omitted the nasal syringing on the theory that an antiseptic strong enough to kill the meningococcus will probably have a similar effect on the cells of the nasal mucosa, whereas one strong enough only to inhibit their growth will so injure the nasal mucosa as to render it even more unable to resist the attacks of the organism. The result of these measures, as of those of Dr. Nicholls, was absolutely successful, not a single case occurring amongst the natives in the vicinity until six months afterwards, when the second epidemic occurred amongst natives lately imported from a totally different source.

Second Series.

This epidemic, as above mentioned, occurred amongst natives employed as military porters, who had been for a month in Mombasa, and amongst whom, while in Mombasa, a few sporadic cases had occurred.

CASE 1B.—Aged about 14. Physique and general condition poor. Onset almost insidious, with mild headache, very slight stiff-neck, and slight pains in the limbs. These increased until, on the third day, the headache was very severe and the head retraction excessive. On the fifth day semiconsciousness supervened, with, at times, delirium, in which the patient was very restless, and, on one occasion, eluded his watchers and walked 400 yards before he collapsed. This condition continued for some eight days, during which wasting became excessive. Recovery commenced about the twelfth day, proceeded uneventfully, and was complete in about five weeks from the onset.

There followed five cases of no special interest, four of which died. These five cases showed a tendency for the disease to assume a more virulent type, as evidenced by the suddenness of onset, severity of general symptoms, excessive head retraction, shortened time before the onset of unconsciousness, and the rapidity of the occurrence of death. None of the cases that died had any treatment other than symptomatic. The one that recovered was treated with intramuscular injections of soamin, gr. 5, on alternate days, but only in the later stages of the disease when convalescence was well established—i.e., during the later stages of the epidemic, when I made the exhibition of soamin a routine measure.

CASE 2B.—Aged about 25. Physique and general condition exceptionally good. History of syphilis probable, but not very clear. Taken ill at 6 P.M. with severe headache, and pain in the back of the neck and back. The obtainable history is not very clear, except that he was obviously very ill quite soon after the onset. About 2 A.M. unconsciousness supervened, and continued without remission until death. When I first saw him at 9.30 the next morning he was deeply unconscious, with rapid stertorous breathing, and in a condition of absolute flaccidity, and presenting no sign of meningitis excepting the unconsciousness. The general aspect of the case was almost exactly like that of a severe cerebral hæmorrhage. The pupils were of medium size, reacting to light. No strabismus. There was absolutely no resistance to any passive movements of any kind. Fæces had been passed, the bladder was distended, necessitating the use of a catheter. Though I was naturally on the look-out for meningitis, I could not correlate this case with any known manifestations of that disease, and made a tentative diagnosis of cerebral hæmorrhage. The patient died at 11 A.M., 17 hours after the onset of symptoms. At the post-mortem examination I found thick, creamy, yellow pus involving the whole brain and spinal cord, especially abundant at the vertex. The ventricles were filled with turbid fluid, and the ependyma slightly injected.

The 10 or 12 following cases were of the ordinary acute or fulminating type, and betrayed a gradual though distinct tendency for the later cases to be of more virulent nature, both as regards the suddenness of onset, shortness of time before unconsciousness supervened, and rapidity of death. The average history would be sudden collapse of the patient while at his work, complaint of pain in the back of the neck and across the shoulders, and headache of varying intensity. In one or two cases the headache seemed to be almost absent, pain in the head not being complained of until quite late in the disease. In the earlier cases unconsciousness usually came on in the third or fourth day, and death in five to seven days, and in the later ones unconsciousness in from six to 36 hours, and death on the second to the fifth day. Head retraction, Kernig's sign, and general rigidity were present in all these cases; the abdominal and epigastric reflexes were always absent. No cases showed any material change in the tendon reflexes.

CASE 3B.—A case of the ordinary rapid type with unconsciousness on the third day and death on the fifth day. On the third day enormous quantities—several ounces—of thick yellow pus were discharged from the nose. In this pus I demonstrated the presence of intracellular diplococci.

CASE 4B.—A case of the rapid type with death on the third day. Unconsciousness supervened only about 10 hours before death. On the second day diarrhœa commenced, at first with the passage of fæcal stools; afterwards no fæcal matter was passed, but large quantities of mucus mixed with yellow pus. Unfortunately, I was unable to examine this pus microscopically.

CASE 5B.—Aged 22 or 23. Physique and general condition good. Sudden collapse while at work at 12 o'clock midday. Within half an hour the patient was unconscious, and died at 2 P.M. The post-mortem examination showed a slight excess of cerebro-spinal fluid, containing pus cells and intracellular diplococci.

At this stage, three weeks after the outbreak of the epidemic, the general run of cases showed a tendency to diminution of virulence according to the standards above set forth, while coma lasted a shorter time, and death became less inevitable.

CASE 6B.—The patient was of good physique, but the general condition was unsatisfactory. He came as an ordinary out-patient, complaining of headache. I found stiffness of the neck and a very doubtful Kernig's sign, and gave him a prophylactic dose of soamin, gr. 5. The next day he complained of pains in the arms and legs, and there was slight head retraction, and an undoubtedly positive Kernig's sign, together with distinct general muscular rigidity of the limbs. For three weeks the neuritic pains in the limbs continued, and he complained of girdle pains involving the trunk roughly from the dorsal roots 9 to 12, and I was able to demonstrate a band of hyperæsthesia involving the skin area of the same dorsal nerve roots. I could not find any anæsthesia. Weakness of the legs increased and eventually became excessive. The knee and ankle jerks were very weak, but could always be obtained with difficulty, but there seemed no doubt that the weakness of the legs, though largely due to the general condition, was to be partly accounted for by a definite myelitis involving the anterior cornua of grey matter of the lumbar region, or neuritis of the anterior nerve roots. Wasting of the muscles of the legs was very excessive.

At no time did this case show any signs referable to cerebral meningeal involvement, except for the very slight headache and almost negligible retraction of the head. Recovery was gradual but complete, the patient complaining of pains of a rheumatic type in the limbs for a fortnight or three weeks after the cessation of all active disease.

CASE 7B.—Almost exactly similar to Case 6B, except that the first symptom was neuritic pains in the limbs. The arms in this case were more involved than the legs, and there was indefinite hyperæsthesia over the chest. In this case there was rather more head retraction than in the last case, and a distressing feature was a very severe herpes labialis involving the upper and lower lips, and spreading outwards on either side of the corners of the mouth.

CASE 8B.—A case of mild type and slow onset. On the fourth day the temperature rose to 107° F., and I found signs of a slight broncho-pneumonic condition at the left base. The hyperpyrexia continued for three days with a temperature of from 105° to 107°, and the case ended in complete recovery.

CASE 9B.—This patient, aged about 17, was of very poor physique and general condition, and had been attending as out-patient for a month with chronic headache and a temperature of from 99° to 100° every day, to account for which I found nothing on physical examination. He eventually developed a Kernig's sign and head retraction. Eventual complete recovery.

I adopted the same prophylactic measures in this epidemic as were so successful in checking the first. On two occasions the bathing of the 800 natives implicated in cyllin 1 in 400, and their clothes, bedding, &c., in cyllin 1 in 200, was carried out. The camp in which they lived was twice moved, the corrugated iron, of which the huts were made, being at the same time exposed to the sun for two days. Isolation of contacts was, of course, carried out and a strict isolation of cases enforced. The hut in which any case had occurred was broken down and the iron composing it exposed to the sun for two days and all the huts had their roofs removed every day, so that the vertical sun could get at the interior. As a last despairing measure the camp was split into two separate halves, and each half into two sections, in the hope that one section might be declared free from the disease, but no good resulted, and the disease only died out when all the natives were returned to their own homes in a part of the country where cerebro-spinal meningitis is endemic and not epidemic.

The treatment adopted was in the main symptomatic, but in the later stages of the epidemic intramuscular injection of soamin, gr. 5, on alternate days was carried out on every case, both in the case of those in the acute stage and of those convalescent from the acute stage in the earlier stages of the epidemic. As regards these injections the syringe and needle were carried in a small tin filled with cotton-wool soaked with methylated spirit. The soamin was made up in a solution of gr. 1 in ♏ 5 of filtered water, sterilised by boiling, and kept in a small glass-stoppered bottle holding 16 doses. For use the syringe was removed from the spirit-soaked wool (a small piece of which was used to cleanse the patient's buttocks), the needle inserted into the bottle and the required dose drawn up into the syringe, and injected into the buttocks of the patient. If, as was almost invariably the case, another injection had immediately to be given, the process was repeated without further sterilisation, and though I gave upwards of 300 injections in this way, in no instance did any untoward symptoms occur.

Persons attacked.—It will be noticed in the cases which I have detailed above that in patients of strong physique and good general condition the onset was rapid and sudden, the attack severe, and death the rule, whereas the milder cases invariably occurred in the poorer specimens. The two most virulent cases that came under my notice were Cases 2B and 5B, and these were both natives of exceptional physique and general condition;

whereas the mildest case and the one showing the most insidious onset was in a patient of exceptionally poor physique and in a condition of very poor health for one month before he developed the disease. Doubtless, however, I failed to diagnose many still milder cases. This is an extraordinary and, I think, inexplicable feature of my cases, and one that held good, almost without reservation, throughout the two epidemics.

Conditions of bronchial catarrh were very common amongst the natives in whom the second epidemic occurred, amounting certainly to 25 per cent. of the whole number, but I have not been able, on looking over my notes, to correlate any special tendency for those so affected to be attacked by meningitis.

Incubation period.—I obtained no evidence to enable me to make any statement as regards this. Three weeks elapsed after the porters were brought from Mombasa to the highlands before the first case occurred, but his only serves to prove that someone must have carried the virus about with him for that period without showing any symptoms.

Prodromal symptoms.—I was unable to notice any constant prodromal symptoms. The disease usually attacked perfectly healthy individuals without any warning. In one case there had been low fever and headache from an unknown cause for nearly a month before meningitis became obvious, but this had probably nothing to do with the disease.

The Onset and Acute Stages of the Disease.

These may be divided into five general types or degrees of acuteness:—(*a*) Fulminating type, (1) exhibiting the ordinary symptoms of rigidity, &c., and (2) accompanied by coma so deep as to give rise to complete flaccidity; (*b*) acute type; (*c*) the common type, less acute than (*b*); (*d*) subacute type; (*e*) those cases in which symptoms of cerebro-spinal meningitis are practically or entirely absent; and (*f*) spinal type. These must not be taken as pathological, or even clinical entities, but merely as an attempt at classification and subdivision of the disease into the forms in which it is usually seen. For the purposes of description cases complicated by infection by the meningococcus of other organs than the meninges may be placed in a separate category as under (*g*) combined infection, (1) with rhinitis, (2) with conjunctivitis, (3) ? with enteritis.

(*a*) *Fulminating type.*—1. A very common form, of which Cases 3A and 5B are examples. The onset is very sudden, and in a few minutes the patient is completely collapsed. Unconsciousness comes on within an hour or two, but is never so complete that the general muscular rigidity is lost, though the irritability usually seen in meningitis is commonly absent. Death is almost invariable. 2. A rare form of which I have only seen one example—Case 2B. Diagnosis of this form is probably impossible except by the examination of the cerebrospinal fluid, as the clinical condition presents no resemblance to the commonly accepted picture of meningitis.

(*b*) The ordinary extremely *acute form*, in which the onset is sudden, with headache, pain in the back of the neck, and very frequently with pain across the shoulders, with or without the headache and pain in the neck. The patient is very ill within a few hours of the first symptoms, and coma supervenes in from 24 to 48 hours. The ordinary signs and symptoms of meningitis are always present, headache being always acute, head retraction often excessive, Kernig's sign strongly positive, and irritability continues throughout the coma.

(*c*) The *commonest form* is something between Type (*b*) and Type (*d*). The mode of onset is variable, ranging from practically the same thing as in Type (*b*), sometimes accompanied by rigor, to insidious headache, gradually intensifying, with pain radiating down the neck and across the shoulders. In other cases rheumatic pains in the limbs, and usually across the shoulders, are the first complaint. If the patient is examined in the earliest stages it will generally be found that there is resistance to anteflexion of the head, and if the head is forcibly rotated so that the head looks towards one or other shoulder, pain is complained of. A forcible depression, and at the same time forward movement of the shoulders, causes discomfort. Within 24 hours the nature of the case has usually become obvious by reason of the marked stiffness of the neck or even obvious head retraction, and the presence, to a greater or less degree, of spasm of the ham-strings, giving rise to Kernig's sign. This type of case usually becomes semi-unconscious, with continuance of excessive irritability and dislike to being disturbed throughout the acute stages of the disease, and in five to seven days is usually on the way to recovery. Sometimes in this type of case coma deepens, is protracted, and the patient dies from exhaustion or toxic absorption.

(*d*) *Subacute type.*—In this form onset is very insidious, usually with headache, and often with pains of a rheumatic type in the limbs, back of the neck, and across the shoulders. These may continue for several days before the persistence and increasing severity of the headache and occurrence of stiffness of the neck or head retraction give rise to suspicion of the true nature of the disease. The duration of the active stage is from seven to ten days, and complete recovery is the rule. This form is exemplified by Cases 6B and 9B.

(*e*) *Cases unaccompanied by the ordinary symptoms of meningitis.*—These are cases of a very mild type which range from Type (*d*) to those in which there are no symptoms, and the diagnosis rests on the demonstration of the meningococcus in the nasal mucus. In these cases at the extreme end of a long series of types of decreasing virulence, there is probably very slight or no infection of the meninges, the sole lesion being a meningococcal infection of the naso-pharynx. I probably encountered many such cases, but, owing to circumstances especially inauspicious for investigation, completely failed to recognise them.

(*f*) *Cases in which spinal symptoms predominate.*—These cases are obviously due to the predominating implication of the spinal meninges, whilst the cerebral meninges are comparatively little affected. Possibly there is a definite infective myelitis of the cord and neuritis of the spinal nerve roots, or in other cases these may be of toxic origin only. Cases 6B and 7B are examples of this type, different regions of the cord being affected.

(*g*) *Cases in which there is meningococcal infection other than that of the meninges.*—(1) *Rhinitis and naso-pharyngitis.*—This is probably of universal occurrence, to a greater or less degree, in every case of cerebro-spinal meningitis, and is probably the initial lesion. In certain instances, of which Cases 2A and 3B are examples, it becomes a marked feature of the case by reason of the excessive amount of pus discharged therefrom.

(2) *Conjunctivitis.*—This is probably caused merely through the accidental inoculation of the meningococcus on to the conjunctiva, or possibly it is an ascending infection from the nose *viâ* the lacrymal duct, and is of no special interest. Examples are quoted in Cases 1A and 2A.

(3) *Enteritis.*—In the absence of any positive evidence on this I can say nothing. The point is of importance in connexion with prophylaxis as regards the treatment of fæces, not so much in England, where the method of disposal of sewage prevents the desiccation and pulverisation of fæces, as in places where the earth system is the rule.

General Symptoms and Signs.

We have, therefore, in cerebro-spinal meningitis a disease varying widely in type, acuteness and severity. At one end of the scale it is a disease of such exceptional severity and acuteness that it can cause death in so short a period as two hours (*vide* Case 5B), and at the other end occur cases with possibly no symptoms, and in which the existence of a definite meningeal infection is improbable, though there is certainly a meningococcal nasopharyngitis.

I have already discussed, incidental to the description of cases, and analysis of the types of the disease, the common signs and symptoms of the disease. It remains, therefore, only to touch on one or two other points of interest.

Temperature.—In the average case this rises rapidly with the onset of symptoms to anything between 100° and 103°, and thereafter is very irregular until all active disease has ceased. In Case 6B, which I saw very early, almost before the signs of meningitis had developed, the temperature had already reached 100·2°. In one case (8B) the temperature rose to 107° and remained near that height for three days, but this case was not wholly uncomplicated, there being a broncho-pneumonic condition of the lungs at the same time.

The pulse.—This shows nothing characteristic. I was quite unable to verify the popular supposition that the pulse is comparatively slow in meningitis, as in every case the pulse-rate was in keeping with the height of temperature then prevailing.

Subcuticular hæmorrhages.—These were never observed, possibly owing, in some measure, to the black skin of the patients.

Ocular palsies.—These are said to be very common in meningitis. I, however, never saw them in any case of this series.

Optic neuritis.—I was debarred by general circumstances and the lack of a suitable lamp from making a routine examination of the fundi oculorum. (Not that I believe that it would be possible under any circumstances with the average raw native.) In no case during convalescence or on recovery was there any complaint of defective sight.

Treatment.

Dr. J. O. Shircore, of the East African Medical Service, has written a very able article praising the effect of intramuscular injections of soamin in meningitis. He claims that the drug is excreted into the cerebro-spinal fluid and there has a deterrent effect upon the growth of the organism, and he gives results of the examination of the cerebro-spinal fluid of cases before and after the use of the drug, from which he claims that its use caused degeneration of the diplococci. That may be so, but in the 35 odd cases that I have used the drug I have failed to notice any benefit from its use. Nor could I observe any difference between the general course of the disease in those cases in which it was used and those in which it was not used. Ordinary general treatment on symptomatic lines was adopted in all my cases.

Lumbar puncture I could not employ, for reasons explained above, though from previous experience of its use in cases of post-basic meningitis I very much doubt its efficiency as a therapeutic measure, saving insomuch as its good effect on headache and other pressure symptoms is undoubted.

Morbid Anatomy.

In all cases I found evidence of pyogenic infection of the meninges of the brain and spinal cord, and in all such as microscopic examination of the cerebro-spinal fluid was carried out the meningococcus was demonstrated. The fluid varies from the merest possible turbidity to thick, creamy, yellow pus. In one or two cases there was a preponderance of the pus at the base of the brain, but in the great majority it ascended well on to the vertex and descended into the greater fissures of the brain.

Neither of the cases that showed a preponderance of spinal symptoms came to necropsy, so that the question of the existence of a definite infective, or only toxic, myelitis and neuritis must remain unsolved.

The existence of thick pus in Case 2B, which died 17 hours after the onset of symptoms, is a little difficult to explain on pathological lines.

Cerebro-spinal Meningitis and Post-basic Meningitis, and the Development and Cessation of Epidemics.

The difference between these two diseases is an etiological rather than a clinical one, insomuch as the first is the epidemic form of the second. They are both caused by organisms morphologically identical, though differing in the physiological character of virulence.

Several sporadic cases of meningitis occurred amongst the same group of natives as supplied the second epidemic while at Mombasa, and since they left that place several further sporadic cases have occurred amongst others of their number who remained at the coast. When brought into the cooler climate of the highlands nearly three weeks elapsed before the first case occurred, the next case was two days after, another followed the next day, and thereafter cases occurred at the rate of about two a day for three weeks. On some days as many as four new cases occurred, on others only one. After the three weeks the rate of incidence gradually declined, until during the last week before the whole group of natives were returned to Uganda, and out of my care—i.e., the sixth week of the epidemic—only two fresh cases occurred.

Parallel with the rise and fall of case incidence ran the virulence and acuteness of the attacks. This was so well marked that I have no doubt that if it were plotted out there would be a definite and nearly regular curve showing the rise and fall of virulence of the virus.

I have no definite information on the point, but had the epidemic continued after their return to their homes where the disease is endemic I should certainly have heard of it, and so the two ends of the curve would indicate the point where sporadic post-basic meningitis merges into epidemic cerebro-spinal fever.

Magadi, British East Africa.

A TAMPON FOR CONTROLLING A SEVERED INTERCOSTAL ARTERY,

WITH OTHER POSSIBILITIES.

BY JOHN FURSE McMILLAN, M.R.C.S. ENG.,
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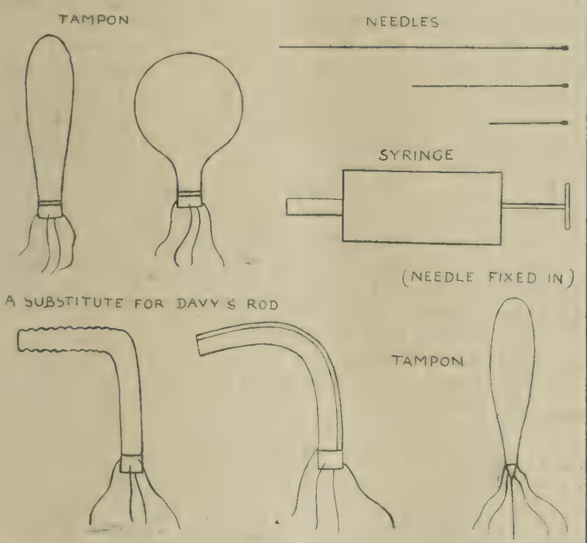
ON one occasion, at Rawal Pindi, India, I experienced the mischance when operating on a case of empyema, the Dieulafoy's aspirator being unavailable, to nick the intercostal artery, whilst using the large trocar furnished in the military operating case. The recognised treatment then was, and seemingly now is, to plug the wound with a dossil of lint saturated with perchloride of iron, or, failing this, to resect a portion of rib and then to tie the severed, or partially severed, artery. But of course in peace time, and presumably also in war time, the occasion permitting, one would be very chary of tampering with the rib of a soldier, whereby a weak spot might be constituted.

Treatment by perchloride of iron in the present case was ultimately successful. But had I been near an instrument maker I would have had made a small tampon of stiff indiarubber of a fusiform shape such as is shown in the illustration. I would have inserted the collapsed round end into the pleural cavity, filled the tampon with water from the nozzle, and then having attached tapes to the stirrups, would have forcibly drawn the now swelled, rounded, hard, and solid indiarubber directly outwards, whereby such pressure would be made upon the nicked intercostal artery as to control it easily, whilst the affixing tapes to the chest wall by means of sticking plaster would complete the matter.



Such an invention or contrivance as the above has not hitherto been employed for the control of hæmorrhage where pressure can readily be applied to bone, and nowadays when operations are common for the treatment of bronchiectasis by ligature of branches of the pulmonary artery the possibilities of such a tampon would appear to be great. To instance: the needles shown, affixed to the nozzle and passed through a wound, should readily control the femoral artery in Hunter's canal; axillary; brachial; an artery lying on interosseous membrane; the subclavian, by passing the needle under the clavicle; branches of the facial and internal maxillary passed outwards from inside the mouth; as a substitute for Davy's external iliac compressing rod—in this case the indiarubber being of stouter substance and of the shape shown in the diagram. Again, the deep gluteal vessels might be compressed against the femur or ligaments; whilst run through the palm the deep palmar arch should be thus controlled without danger of sloughing, for with a water tampon the pressure will be evenly distributed, whilst the main point is backward pressure on bone by the forcible drawing of the tampon towards one.

Sandown, I.W.

THE PSYCHOLOGY OF

TRAUMATIC AMBLYOPIA FOLLOWING THE EXPLOSION OF SHELLS.[1]

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OPHTHALMOLOGISTS have become familiar recently with cases of amaurosis and amblyopia resulting from the shock of the explosion of shells at the front. In many cases direct injury of such a nature as to cause definite organic lesion in the eye or visual paths can be eliminated. The earlier symptoms, which I have not personally observed, have been described and investigated by Dr. C. S. Myers, F.R.S.[2] The history of a typical case is briefly as follows.

A man after more or less prolonged fatigue, induced by marching and exposure in the trenches, is incapacitated by the explosion of a shell in his immediate vicinity. He may be merely knocked down or thrown into the air, and more or less seriously injured or wounded by concussion, shrapnel bullets, or shell splinters. Consciousness is lost for a variable time, but often not so far as to prevent automatic movements, so that the man may walk in a dazed condition to a dressing station. The mental equilibrium at this stage is much disturbed, and all memory of this phase is usually lost. The most striking feature of the case is that the man is instantaneously struck blind. The blindness may be associated with deafness, loss of smell, and loss of taste, but all these are less frequent than the blindness. On examination it is found that there are intense blepharospasm and lacrymation. The lids are opened with great difficulty and examination of the eyes is almost impossible. I am not aware of any record of the condition of the pupils at this stage. In the course of a week or two the blepharospasm diminishes and it becomes possible to examine the fundi. Of course, there may be local injury to the eye, but in uncomplicated cases the eyes are found to be normal. The pupils react to light, though in some cases the reactions are sluggish, and sometimes one pupil differs from the other, being larger, or more sluggish in its reactions. The fundi appear to be absolutely normal. By this time probably some restoration of sight has occurred. Light is perceived and large objects may be distinguished. As improvement occurs the patient manages to grope about, usually with his hands outstretched before him, but it is noteworthy that he does not usually stumble up against objects in his path. As soon as it is possible to take the fields of vision it is found that they are markedly contracted, and that indeed to a degree which seems scarcely consistent with the avoidance of obstacles in walking.

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[1] A paper read at the Neurological Section of the Royal Society of Medicine on March 25th, 1915.

[2] THE LANCET, Feb. 13th, 1915, p. 316.

The recovery of vision is slow, but eventually it seems always to be complete. In the later stages I have had cases in which the right eye is more affected and recovers more slowly than the left. It may recover to the extent of having only a central scotoma, though this may reduce the visual acuity to 6/60 or less. By perseverance and encouragement the patient may be induced to read a few lines of the types, and I have had cases where the manipulation of weak plus and minus lenses has led to the full 6/6 being read.

Now there are several suspicious symptoms in many such cases. The eye to recover last is often the shooting eye. Some patients show an obvious disinclination to return to duty. Some candidly admit to being in a "blue funk." In all there has been a complete mental upset, sometimes accompanied by hysterical symptoms—outbursts of weeping, &c.—in the early stages. These features render it only too easy to jump to the conclusion that there is often a large element of shamming in the case. It is because there is very grave danger of cruel injustice being done to men who have faced the music and come battered out of the ordeal that I wish to attempt an explanation of the underlying psychology.

In the first place it is necessary to segregate these cases from allied conditions due to organic lesions or to malingering. It is not always easy to eliminate organic lesions of the type which causes so-called retrobulbar neuritis. It is still less easy to eliminate malingering, but as this depends upon a knowledge of the psychology of the individual it forms a prime object of the following discussion.

Since there is no demonstrable organic lesion these cases may be regarded as examples of injuries or wounds of consciousness. This does not imply that there is no neural lesion to account for the psychological disorder, but merely that it has hitherto escaped observation. Without entering into a disputed question, which is largely metaphysical, we will adopt the view of parallelism between physiological neural processes and psychological events or changes in consciousness.

As regards cases of the type to which the group under consideration belongs, it may, I think, be admitted that the disorder of the conscious processes varies with the nature and severity of the injury and with the organisation of the individual's character. Of these the latter is by far the more complex, and in order to make my meaning clear it will be necessary as briefly as possible to sketch the evolution of character. In doing so I shall be guided chiefly by the deductions of such writers as C. Lloyd Morgan, J. Mark Baldwin, and William MacDougall, whose extraordinarily suggestive work does not seem hitherto to have been sufficiently brought to bear upon pathological problems.

Mental evolution may be divided into three stages, which may be called the sentient, the conscious, and the ideational. The sentient stage is exemplified in those organisms which show simple reflex response to stimulation. In the lowest stage of all, such as the amœba, the three parts of the reflex arc, the afferent, central, and efferent, are not anatomically differentiated. Organic evolution is accompanied by anatomical complexity and correlation of reflex arcs. The conscious stage is exemplified by those animals, such as birds and lower mammals, in which complex and compound reflexes have become organised into instincts; mere sentience—as we may call it, for we can have no knowledge of what this lowest grade of consciousness really is—gives place to consciousness which is limited to the perceptual plane. The mind of such an animal is conscious only of the percepts derived from concrete objects. It reacts to these primarily in an instinctive manner in accordance with inherited instincts, the motor responses varying according to the species. In addition, however, it has acquired the ability to modify these motor responses in the light of experience. In other words, it is capable of controlling and modifying its instinctive reactions by intelligence. In the highest stage, which is reached so far as we know only by man, consciousness is raised to the conceptual plane. The animal has acquired the ability to think in terms of abstract ideas and to form rational judgments.

Animal life possesses one all-pervading feature, the capacity for and manifestation of movement, and from one end to the other of the scale the movements are teleological or purposive. It is for the metaphysicians to explain—if they can—why a merely sentient organism manifests purposive movements when it is inconceivable that it can in any sense have knowledge of the end which will be ultimately attained. Indeed, it would be a bold assumption that such is really the case if it were not unexceptionably proved that at a higher level many lower animals perform the most complicated instinctive actions for an end—often the preservation of the species—which it is quite impossible that they can foresee. Movement entails wear and tear of protoplasm, no matter how lowly it be, so that the fundamental teleological factor is the search for food, and biological necessity demands the preservation of the species. Hence the behaviour of the lowest organisms is directed to two ends, nutrition and reproduction.

The simple reflex is a purposive response to stimulation. The stimulus sets up an afferent impulse which acts upon a central mechanism. The motor response is determined in the centre by the nature of the afferent impulse, and in its simplest form is a positive or negative taxis.

The simple instinct, compounded of complex reflexes, shows a similar tripartite nature, afferent, central, and efferent. The afferent impulses so modify the central mechanism as to give rise to an affective state in consciousness. This state is an emotion. It in turn gives rise to a definite and specific conation or striving to a particular end. The conation manifests itself in motor activities all designed to attain that end. In so far as the end is attained the emotion is satisfied and a pleasurable feeling is experienced; in so far as the end is thwarted, dis-pleasure is experienced, and this usually reinforces the conation until eventually the end is attained.

MacDougall enumerates the following primary instincts and emotions of man: the instinct of flight and the emotion of fear, the instinct of repulsion and the emotion of disgust, the instinct of curiosity and the emotion of wonder, the instinct of pugnacity and the emotion of anger, the instinct of self-abasement (or subjection) and of self-assertion (or self-display) and the emotions of subjection and elation (or negative and positive self-feeling), the parental instinct and the tender emotion, the instinct of reproduction, the gregarious instinct, the instinct of acquisition, and the instinct of construction. To these are added certain innate tendencies—sympathy, suggestion, imitation, and so on.

In addition to the afferent impulses received from external stimuli, others are received from internal organs. The sum total of the normal impulses determines the obscure background of consciousness (cœnæsthesia) on which the general tone of mental life depends. The *disposition* of an individual depends upon the sum of all the innate instincts with their specific conative impulses. The *temperament* depends upon the influences exerted on the nervous system and through it on mental process by the functioning of the bodily organs, and on the general functional peculiarities of the nervous tissues.

In lower animals the emotions are probably generally experienced in unmixed forms. In man they tend to become combined in organised systems each centred in some object. These organised systems are the sentiments (A. F. Shand), of which love, hate, and respect are the types. Admiration, awe, gratitude, scorn, contempt, envy are complex emotions which do not necessarily imply the existence of sentiments. Reproach, jealousy, resentment, revenge, shame, remorse, sorrow, pity imply the existence of sentiments directed towards some object. "It is only through the systematic organisation of the emotional dispositions in sentiments that the volitional control of the immediate promptings of the emotions is rendered possible. Again, our judgments of value and of merit are rooted in our sentiments; and our moral principles have the same source, for they are formed by our judgments of moral value" (MacDougall).

Further, moral conduct is essentially social conduct. Psychology has been revolutionised in recent years by the writings of William James, G. F. Stout, and others, who have thrown into relief the previously well-nigh disregarded fact that the development of the individual mind cannot be explained by isolating it and examining its workings by introspection alone. Each mind is endowed with innate properties; these show inherited variations which cause one mind to differ from another. But in addition to this each mind is subject to acquired modifications due to its environment, and the most important element in its environment is the group of other minds with which it is brought in contact. Advance in moral conduct and the development of *character* are brought about by the growth of self-consciousness and of the self-regarding sentiment. The idea of self and the self-regarding sentiment are essentially social products, so that the complex conception of self ultimately attained is always of self in relation to others. MacDougall distinguishes four successive stages in the development of conduct: (1) the instinctive stage modified only by the experience of pain and pleasure; (2) the stage of control by rewards and punishments; (3) the stage of control by anticipation of social praise and blame; and (4) the stage of regulation according to an ideal of conduct.

Such, in the sketchiest outline, is the mental evolution which culminates in the individual character. The analogies which have been arduously elicited from comparative psychology are very illuminating, but they must not be pressed too far. It is true that in physical development the individual rapidly recapitulates the chief stages of the history of the development of the species, but this is true only in a broad sense, and can only be proved of any detail by direct observation. Similarly in the mental evolution of the child, so ably studied by Preyer, J. M. Baldwin, and many others, an instinctive phase resembling that of lower animals, an animistic stage resembling that of primitive races, and so on, may be dimly indicated, but it is doubtful if a baby ever exhibits a complete yet unadulterated instinctive response.

Underlying the psychological development outlined above there is a physical neural development, in which the tremendous stride which the human species has taken beyond the anthropoid ape is most obviously shown in the enormous development of the pallium. The development of the cerebral cortex, however, has not taken place without the most extensive rearrangement of lower structures. Cerebral control does not mean simply control of unaltered units. It means also modifications in the units themselves—modifications in reflex and instinctive responses both in kind and degree.

To sum up this long but necessary preamble, in the cases under consideration we are dealing with individuals of various moral and psychological character, disposition and temperament. Their temperaments are determined chiefly by the condition of their visceral organs and circulation. Their dispositions are determined by the sum total of the conative impulses of certain primitive instincts which vary within relatively narrow limits in their innate characteristics and relative strengths, and are subject to acquired modifications in accordance with the environment of the individual. Their characters are determined by their temperaments and modified innate dispositions, of which the latter are subject to a volitional control which varies according to the social environment and educative experience.

In the evolution from stage to stage through the phases reflex, instinctive, and ideational the earlier stage is not lost, but is made to subserve the new conditions. Thus in the most highly developed species, man, all persist. The earliest or reflex stage persists in the lowest anatomical and physiological level. It can hardly be doubted that the highest is a function of the most recently and highly differentiated part of the cerebral cortex. Whilst, however, we may say that the reflex mechanism is specially associated with the lower—segmental—region of the central nervous system, stretching from the mid-brain to the end of the spinal cord, owing to the elaborate rearrangement of structure and function which has occurred, it is at present impossible to localise with any degree of precision the neural bases of the higher instinctive and ideational processes. Their complexity is largely, though by no means wholly, a matter of correlation and association; and the anatomical basis of an isolated physiological function is to be sought rather in a unified system of widely spread neuronic paths—afferent, associational, and efferent—than in any so-called "centre."

It is further to be noted that the subservience of the more primitive phases of evolution is associated with what may be described as subservience in consciousness. Afferent sensational impulses, modified by afferent visceral impulses and by other more subtle impulses due to previous experience, lose to a large extent their specific characters and become merged in a complex cognitive impulse. Even from this the mind springs forward as it were to the emotional state which is thus aroused and becomes concentrated on the efferent conation. Consciousness is focused on the appointed end; all else is relegated to a subconscious background.

The effects of an intense emotional shock on this highly complex system may, *a priori*, be expected to be manifold and complex. Let us consider the effects of a blinding flash of light. In the first place it will produce certain definite reflex results—sudden closure of the eyes, retraction of the head, perhaps recoil of the whole body, and so on. Actual damage may be done to the delicate retinal structures, resulting in temporary or permanent defect of vision. But apart from these effects, the strong light stimulus will have other far-reaching results. Sudden and unexpected visual sensations play an important part in the sensational complex which gives rise to the emotion of fear. They are less potent, as a rule, in this respect than auditory stimuli. Nevertheless, they arouse an emotional state which varies from mere surprise to actual fear. Doubtless the natural instinct of flight is suppressed in the adult by the intervention of the self-regarding sentiment and manifests itself only in a sudden start. If the blinding flash is accompanied by a loud noise the emotion of fear is still more powerfully aroused. If also accompanied by an offensive smell the emotion of disgust is aroused and gives rise to repulsion.

The response of an individual to such a shock depends, therefore, essentially upon the degree of development of his self-regarding sentiment. As we have seen, this depends upon his disposition—i.e., the sum of all his innate instincts, his temperament, and the modifications and control which these have acquired as the result of his environment and experience. We cannot, however, isolate the sensational complex which causes the shock from the concurrent circumstances. The response will vary also according to these conditions—e.g., according to whether the individual is alone or one of a crowd, and so on.

In the case of a soldier under shell fire the conditions are unique. The man is usually bodily fatigued, whereby his control is impaired. He has "the fear of death before his eyes" and is in a state of acute excitement, whereby his normal judgment is impaired. These conditions conspire to give his innate instincts ungoverned play. On the other hand, positive self-feeling, aided by suggestion and imitation and the sentiments of patriotism, the honour of the regiment, his own honour, and so on, enforce his volitional control. At last, however, the shock comes which strikes him unconscious. It is not to be supposed that he is thereby anæsthetised to these emotional storms. It is rather to be conjectured that he is rendered "subconscious," and hence the more a victim of his lower instincts. This view is supported by the emotional behaviour of the men in the early stages, and by the fact that many of their actions can be revived by hypnosis.

The "unconsciousness" in these cases is to be explained physiologically by an abrogation of the functions of the highest level cortical cells. Recovery shows that the cells are not irretrievably damaged, and it is most likely that the block occurs on the afferent paths at the synapses of these cortical cells. Consciousness returns but there is blindness. So far as objective evidence goes the lower visual paths are intact and function normally. The optic nerves carry their impulses, at any rate as far as the pupil reactions are concerned. The condition resembles uræmic amaurosis. I have seen it also in children after post-basic meningitis. The block is somewhere above the so-called primary optic centres—external geniculate bodies, optic thalami, and superior colliculi. It, too, is probably in the synapses of the cortical cells, in this case the synapses of the fibres of the optic radiations. Sometimes such a block occurs physiologically and it is probably to be explained in the same manner. Everyone knows what may happen when reading an uninteresting book whilst the attention is diverted by some other train of thought. A paragraph is read and one suddenly becomes conscious of the fact that nothing has been conveyed to the mind. Yet on reading it again one may recall certain sentences as undoubtedly having been read though they failed to reach the fully conscious mind. Perhaps the suppression of the image of a squinting eye is to be explained in the same manner.

It is definitely stated by Dr. Myers that smell is partially lost in spite of the fact that there is no unpleasant odour noticeable when a shell explodes. This is probably to be explained by suggestion. I do not, however, think that it is necessary for the explanation of loss of vision and hearing that the visual and auditory paths respectively should have been definitely stimulated. These paths—situated in such intimate relation with the higher levels—play such a prepotent part in cerebral processes—equilibration, spatial percepts, and so on—that at any rate a partial visual block might be expected at times to persist beyond the recovery of consciousness. The duration of such persistence, however, is likely to be much greater if the primary shock has a powerful visual element, whether it be a blinding light or an awe-inspiring spectacle.

Though in the cases under special consideration there can be little doubt that the early loss of vision has a definite neural basis, it must, I think, be conceded that in the later stages the neural basis is of that undefined nature which we associate with so-called "functional" conditions. In other words, it is neurotic, but it is not "shamming," difficult though the line be to draw between them. I have had one case in which the vision of the left eye improved to 6/6, while that of the right improved to 6/36. By manipulating various glasses I succeeded in making the patient read 6/6 with + 0·5 D. sph. and − 0·5 D. sph. before the right eye and + 6 D. sph. before the left. He had the chance of taking a commission and was eager to do so. I feel convinced in my own mind, from his character and demeanour, that he was quite honest.

It has already been mentioned that in the earliest stage of recovered consciousness volitional control is almost or quite abrogated. The man is merely an emotional animal, or rather worse, for he is deprived of that intelligent control which plays such an important part in animal life. His behaviour is hysterical, but it is a passive hysteria, unlike the commoner active hysteria in which the partially emancipated emotions are often guided by some preponderant ideational impulse. There can be little doubt that in this stage the most potent of the primæval instincts—fear—holds almost undisputed sway, irrespective of the normal character of the individual, for the loss of volitional control implies the loss of the coördination of all those complex factors which make up the character of the man. As recovery progresses the outward manifestations of fear are more and more masked or suppressed, for the self-regarding sentiment gradually again becomes restored.

Its restoration, however, will be in accordance with the innate dispositions of the individual. If he is naturally mean-spirited it is unlikely that his self-regarding sentiment has developed beyond the stage of merely masking an ever-present pusillanimity; his motive power is limited to a sense of shame. If he is naturally of a fine character his fears will be suppressed with ever-increasing vigour as he becomes more and more conscious of the ideals of conduct which have shaped his character. In this stage of struggling to regain control the patient is at a disadvantage, and the acute observer will have the best opportunities for studying his springs of conduct. There are rare characters in which the emotion of physical fear appears to be non-existent, but in the vast majority of cases it is present, and however cleverly it is masked or however nobly it is suppressed it has to be reckoned with. If merely masked it will prove a very powerful incentive to the avoidance of renewed exposure to danger, and a temporary disability may give place to deliberate fraud. If suppressed it may yet require all the help which can be derived from the highest sentiments, reinforced by suggestion and by the active sympathy of discreet friends and advisers. These may all fail, but if so it is a case for pity and encouragement rather than contempt and obloquy.

It appears to me that these are the principles which should guide the medical adviser in his investigation and treatment of the case. We are accustomed to take the past histories and present conditions of our cases. In these "wounds of consciousness" the past history involves a difficult investigation of the innate dispositions and propensities of the individual, the environment to which he has been subjected in his home life, his school life and his further career, and last, but not least, in the special cases under consideration—the motives which led him to join the colours. For every man who enlists is not necessarily a ready-made hero. Many have enlisted merely because they are ashamed of not following the example of their friends. All honour to them; but they are not equipped with the sterling qualities of the man who is impelled by a noble ideal. The latter may recover completely from the shock, reinforced, indeed, by the sense of a moral victory won. The former may remain partial wrecks, too fearful of a renewal of their terrifying experience to be of any use in the fighting line. By injudicious forcing they may be wrecked entirely. On the other hand, by carefully studying their habits and tastes they may be switched off into other paths which will lead to the restoration of self-esteem and make them again useful members of society.

The investigation of the present condition is simply psycho-analysis in the true sense of that much-abused term. Amongst the many instincts and sentiments which have been enumerated and which will require to be studied and weighed, the sexual instinct will hold its proper, and no more than its proper, relationship. It cannot be ignored, for it is at the foundation of the parental instinct, the tender emotion, and the sentiment of love. As such it is potent for good or evil, and it is the physician's part to utilise it for good as far as may be, and above all not to frustrate that end by his own indiscreet probings.

As Dr. Myers has shown, hypnosis may be valuable in reconstructing the history. I am doubtful as to its use as a method of treatment, but others are better qualified to judge on that point. As regards therapeutic measures, it should be remembered that fright causes great exhaustion of the suprarenal glands.

I have restricted my remarks to a special type of so-called traumatic neurosis, but it is obvious that the principles which have been discussed are capable of wide-reaching application.

HETEROLOGOUS TRANSPLANTATION: MOUSE TUMOURS IN RATS.

BY W. E. BULLOCK, M.D. EDIN.,
ASSISTANT, IMPERIAL CANCER RESEARCH FUND.

WHEN a tumour arising in one species of animal is inoculated into an animal of another species the tumour fails to grow progressively. This specificity has in some cases been found to be so marked that a tumour occurring in one variety of mice will not grow in another variety. Throughout the literature of the experimental investigation of cancer there may be found repeated references to these facts, which must be taken into consideration in any theory of cancer. J. B. Murphy[1] has shown, however, that rat and mouse tumours may be grown by inoculating developing chick embryos. The inoculation is made on the fifth to the eighth day of incubation. The transplanted tumour fragment grows vigorously up to about the seventeenth day and then begins to be absorbed. Thus we have here a remarkable and conspicuous exception to the rule of specificity already noted.

It has been shown by Rywosch[2] that chick embryos have practically no bactericidal or bacteriolytic powers; and, *a priori*, one would suppose that the explanation of the success of the transplantation of rat and mouse tumours to chick embryos is to be found along similar lines—namely, the absence in the developing chick of the mechanism by which resistance to tumours of a foreign species is produced. The phenomenon has also been explained by assuming that the embryo contains an excess of "growth substances" which are not yet differentiated and which can thus provide sufficient of these necessary materials for the proliferation of the tumour cells.[3]

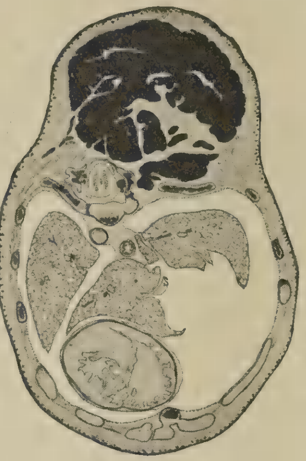
It seemed reasonable to anticipate that the mammalian embryo will provide as suitable a host for a tumour of another mammalian species as the more distantly related chick embryo, and it is with this possibility that the present paper deals. A brief outline of the work has already been given in July, 1914, in the Twelfth Annual Report of the Imperial Cancer Research Fund.

The technique by which developing chicks are inoculated is very simple, but the difficulties of inoculating mammalian embryos through the uterine wall without bringing gestation to an end are very great, though it has been done.[4] It was therefore decided first of all to inoculate new-born rats with mouse tumours. It is to be noted that when a freshly hatched chick is inoculated with a rat tumour the tumour fails to grow, and it might be thought, by analogy, that a mouse tumour would not grow in new-born rats. But this was found not to be so.

The rat, under 24 hours old, is inoculated by the needle method, preferably in the subcutaneous tissue of the back. Occasionally the needle strikes a vein and a fair amount of blood is lost, but only one animal in several hundred was killed by the actual inoculation. The transplantation must be carried out quickly and the animals must be kept warm. The chief difficulty in this work lies in rearing the young rats. The mother is very liable to kill her young after they have been interfered with, but these accidents may be very much reduced by handling the mother rat frequently during the period of gestation.

The tumours inoculated were a polymorphous sarcoma (37), a carcinoma (63) which in mice grows progressively until it kills the host, and a carcinoma (206) which grows for about 16 days and then disappears, leaving the mice in an immune condition. With each of these tumours it was found that rapid growth takes place in rats inoculated during the first day of life for from 10 to 17 days, the tumour then disappearing, as illustrated in the charts reproduced. (Charts A, B, C.) From a dose of 0·01 c.c. it is easy to obtain in 10 days a tumour weighing over 1 gramme. (Fig. 1.) The mass consists of healthy tumour cells, showing in microscopical sections their characteristic shape and arrangement, with numerous mitotic figures. After the tenth to seventeenth day increasing numbers of fibroblasts grow in thick strands from the capsule into the tumour, the tumour cells becoming necrotic. Eventually in a further period varying from one to two weeks the whole tumour is absorbed.

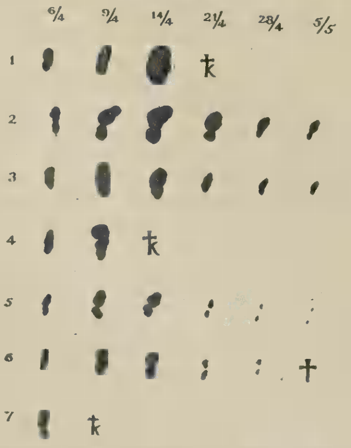
FIG. 1.



Section through the thorax of a young rat 17 days old, bearing a mouse sarcoma. The tumour (black) is penetrating between the spine and the muscles. Small areas of necrosis and bands of fibroblasts are found in the tumour; in the healthy parts of tumour mitoses are numerous.

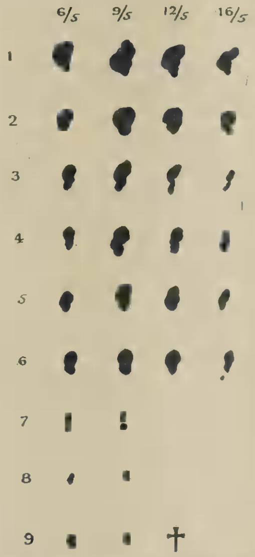
With regard to the sarcoma it was found to differ om the carcinomata in that it grows very well also in half-grown and adult rats. Russell[5] has shown that the cells of a mouse carcinoma survive and multiply in the normal adult rat for nine days; but the extent of this growth is insignificant compared with what has been obtained from minute grafts of the polymorphous sarcoma (37). Chart C indicates the size of the tumours obtained with doses of 0·02 c.c. of this sarcoma.

CHART A.



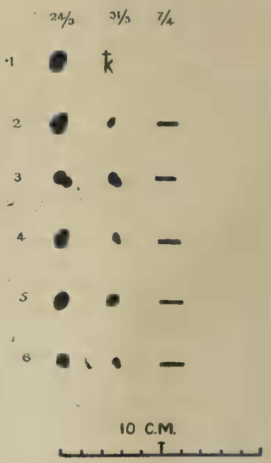
New-born rats inoculated on 30/3/14 with mouse carcinoma (63); dose 1·01 c.c. Scale as in Chart C.

CHART B.



New-born rats inoculated on 29/4/14 with mouse carcinoma (206); dose 0·01. Scale as in Chart C.

CHART C.



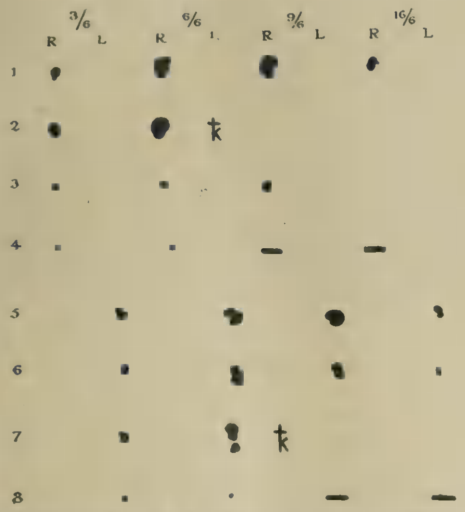
Half-grown rats, average weight 60 grammes, inoculated 17/3/14 with mouse sarcoma (37); dose 0·02 c.c.

The attempt has also been made to cultivate this sarcoma in series both in new-born and in half-grown rats. In the former case the attempt was partly successful; the tumour was maintained 49 days for five generations in rats, and was then lost through the mother eating the young animals. The growths of the third and fourth generations were, however, smaller than the first and second. This want of complete success was certainly due in part, if not altogether, to the difficulty of obtaining a regular supply of animals of suitable age, and to the frequency with which the mother rats killed their young.

When a tumour which has been kept growing in a succession of rats for as long as 46 days is again inoculated into mice it grows as vigorously as the tumours which have never been grown in rats. In other words, it is not modified by change of "soil"; the tumour cell is killed outright more readily than it is changed in character. It does not seem possible to cause the tumour to adapt itself to its new species of host so completely as to lose its capacity to grow in the species in which it arose. This practically amounts to saying that a mouse tumour cannot be converted into a rat tumour any more than a mouse can be converted into a rat. In the experiments in which the attempt was made to grow sarcoma (37) in half-grown rats, the tumour failed at the fourth inoculation, the growths becoming progressively smaller. Altogether the tumour was kept growing for 22 days in three generations.

One of the most interesting of Murphy's discoveries in his work with chick embryos is that the inoculation of a fragment of adult fowl spleen or bone marrow prevents the growth of a rat tumour inoculated simultaneously.[6] The addition of spleen or, to a less extent, of bone marrow enables the chick to resist the growth of the tumour cells. These experiments have been repeated with young rats, using spleen taken from a healthy adult rat. Half a litter of eight new-born rats were inoculated in the right axilla with 0·01 c.c. of an emulsion of mouse carcinoma (63); the remainder were inoculated in the left axilla with the same dose of the same tumour and in the right axilla with 0·01 c.c. of rat spleen. The growths obtained are represented in Chart D, which shows that the spleen has had no effect on the growth of the tumour. The same experiment was carried out with sarcoma (37) and with carcinoma (206), with similar results. It is probable, therefore, that the mechanism of the production of resistance in chicks to a tumour of a foreign species is different from that in young rats. The change from the new-born to the adult condition must take place fairly rapidly, as young rats a few days old already inhibit to a marked degree the growth of most inoculated mouse tumours.

CHART D.



New-born rats inoculated with mouse carcinoma (63) and with spleen obtained from an adult rat; doses 0·01 c.c. (*a*) Animals 1 to 4 received tumour in right axilla. (*b*) Animals 5 to 8 received tumour in left axilla and 0·01 c.c. of spleen in right axilla. It will be noted that no difference is observable in the amount of growth in (*a*) and (*b*). Scale ▬ in Chart C.

The temporary growth and ultimate disappearance of mouse tumours in new-born rats do not differ essentially from the results of similar inoculations into adult rats. In them also temporary growth, often only recognisable on microscopic examination, precedes the rapidly ensuing arrest of growth and absorption of the foreign tumour cells. Bashford and Russell[8] have shown that this disappearance follows on the development of an active immunity. If baby rats in which tumours of considerable size have developed and been absorbed be re-inoculated with fresh mouse tumour, it is seen that they are immune in the same way, and the sequence in the new-born rat only differs from that in the adult in the relative proportions of the two stages of growth and absorption. There is no valid reason to assume a different cause for the ultimate disappearance in the two cases, and the actively immune condition which has been demonstrated in both suffices to account for it completely. The disproportionate amount of growth obtainable in new-born rats is in all probability due to a failure, or rather delay, in the process of active immunisation. It must not be forgotten, however, that young animals are in general more suitable for tissue transplantation than old. Propagation in series is in consequence possible in very young animals by taking advantage of the rapid growth that occurs in the period which precedes the development of inimical substances. The success which has attended the attempts of several investigators to cultivate mammalian tumours and normal tissues *in vitro* in the plasma of alien species also points in the same direction, as in these circumstances the cellular elements responsible for the development of immunity are absent.

The results of these experiments are mainly of importance because of the analogy they present to the much more obscure process of immunity production by mice and rats to transplantable tumours arising in individuals of their respective species. This analogy is not very close, but it is instructive to note that Russell[7] has shown that those propagable tumours which grow progressively do not produce resistance to a subsequent inoculation. In alien species, however, even the strains which grow without inducing resistance in their own species exhibit only temporary growth and induce active immunity. The experiments will be continued, and the discussion of their bearing on this and other aspects of the cancer problem is reserved for a later date.

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CORONERS' SOCIETY OF ENGLAND AND WALES.—Dr. F. J. Waldo, H M. coroner for the City of London, was elected President of the Coroners' Society of England and Wales at the annual meeting in London of the society on March 23rd. In returning thanks for the honour done him, Dr. Waldo reminded members that the founder and first president in 1846 was Mr. Serjeant Payne, a leader and reformer among coroners. He was president for 26 years, till his death in 1872. The first secretary was Mr. Langham. Both these gentlemen were predecessors of Dr. Waldo as coroners for London before the administrative County of London came into being. Succeeding presidents were Sir John Humphreys, coroner for Middlesex, and his successor, Dr. Danford Thomas, who had done so much for the improvement of coroners' courts, mortuaries, and post-mortem rooms, still so badly wanted in the country. Another strong coroner, he said, was Thomas Wakley, Founder of THE LANCET, and coroner for Middlesex, who successfully fought the justices at quarter sessions in their refusal to pay the rightful fees of coroners for what they (the justices) alleged were unnecessary inquests. Mr. Wakley brought in the Coroners Act of 1860, whereby county coroners were paid by salary in place of fees. Dr. Waldo said that the object of the Coroners' Society was to foster coöperation between coroners, to aid them in the more effective discharge of their duties, and to maintain their rights in the public interest. He promised to do his utmost to uphold the dignity of the coroner's court and the status, privileges, and rights of the coroner.

FURTHER OBSERVATIONS ON

SPERM OIL TUBERCLE BACILLI: THEIR BIOLOGICAL SIGNIFICANCE.

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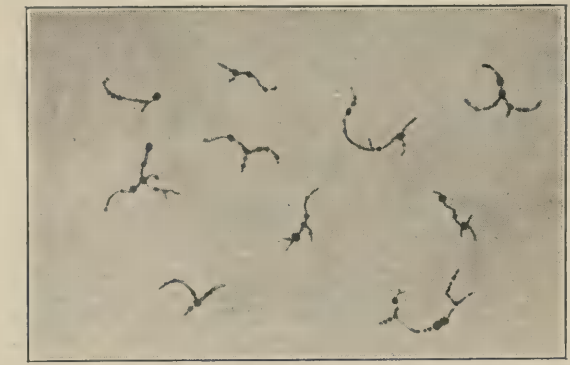
JOINT PATHOLOGIST TO THE SALFORD ROYAL, MANCHESTER CHILDREN'S, AND MANCHESTER NORTHERN HOSPITALS.

CERTAIN changes in the tubercle bacillus were described by me last year.[1] I here wish to go over some points previously mentioned and to bring forward some new matter.

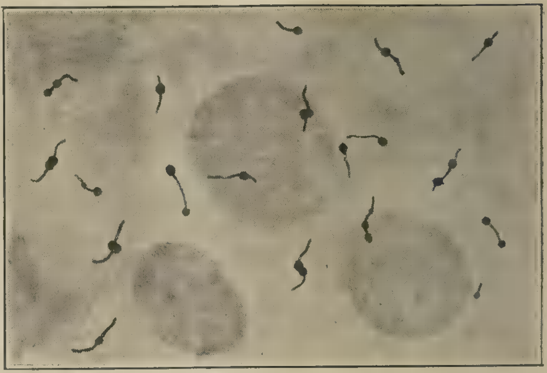
The percentages employed in the article mentioned and in the present one are empirical; other percentages may do as well or better. More recently the crude sperm oil has been used. The organism on the crude oil seems to grow better and more quickly on it than on the refined oil. There does not appear at the present time to be any essential difference between the two as regards either the loss of power of the organism to stain with carbol-fuchsin or the formation of granules, except that by the improved growth of the organism these two conditions take place more readily. If, however, the original culture of tubercle bacilli, to give them their common term, growing on the ordinary solid media is at all old, or growth is sluggish when subcultured, they will probably not grow at all, or only very slightly, when placed on the oil media. For the oil media the bacilli must be known to be actively growing. With actively growing bacilli there is often a definite moist growth in about 12 days' time, but the bacilli themselves are apparently no different from those obtained from the usual sources. It takes a further period of from three to four weeks before the changes described begin to become visible.[2]

FIG. 1.



A three-months-old culture, stained with carbol-fuchsin and washed. Not decolourised. 1/12 in. lens, No. 5 ocular. × 1500. Figs. 1 and 2 drawn by J. M. Manby.

FIG. 2.



Oil bacilli after passage through guinea-pig. From a two-months-old growth on 5 per cent. refined oil and 6 per cent. glycerine. Stain, Zeihl-Neelsen. The non-staining portions of the rods are not shown in the figure. × 1500.

The term "beading" that was used in my former communication is not an accurate description of the organism in all cases, especially in its earlier stages and with the lower percentages of oil (2·5), for the staining parts and the non-staining parts of the organism are then often in the form of definite long segments. Later, when with the richer oil mixtures the granules begin to develop and the segments to become broken up, the term "beading"[3] is perhaps better. It is not my purpose here to go into the earlier stages of the organism, the lower percentages of the crude oil have not yet been tried, but to bring forward the late results of growth on 5 per cent. mixtures of the crude oil[4] and some of the results of animal inoculation. The organism grows on the surface of 5 per cent. crude oil and 5 per cent. glycerine as a thick uniform greasy pellicle. Microscopically it alters considerably in shape and form; it begins to *branch* (Fig. 1). Branching is also seen in the refined oil (5 per cent.), but not to so great an extent. The stage of growth here represented shows the branching forms here and there in a field, the remainder of the field being occupied by rod segments. The rod segments also are more filamentous and irregular, the latter from the breaking-up of their substance by the formation of granules and in some of them by the presence of little offshoots, the beginnings or the stumps of their ramifications. At the same time they stain with greater difficulty. The staining portions of the segments do not as a rule stain with their usual vividness. The slide requires to be well heated for eight or more minutes. Branching appears in most cases to occur where there is a large "granule" present. In others small lateral offshoots seem to arise from the segments without any granule being visible, possibly false branching. Granules form in the segments as they grow, and they in their turn give off other segments. Further evidence that these "granules" are essentially bodies whose function is to germinate can, I think, be seen in animal inoculation. Fig. 2 represents oil bacilli after passage through a guinea-pig. The culture was a two-months-old growth on 5 per cent. refined oil and 6 per cent. glycerine. The growth, not emulsifying with watery fluids, was ground up with olive oil in the proportion of two loopfuls of growth to a cubic centimetre of olive oil and then injected intraperitoneally. The animal died 22 days later. The necropsy showed the liver, spleen, omenta, and glands nearly solid with tubercles. A portion of the tuberculous material was then placed in a mortar, and films were made of the expressed juice. Microscopically, there are a large number of "bacilli" present, some 20–30 in a field, nearly all of which are as those depicted, the remainder being of the ordinary rod form. It will be noted that the "granule" or "spore-body" is generally larger than the culture "granule"; it is also sharply defined and intensely stained, and has attached to it the bacillary portion of the organism. It is also to be noted (Fig. 2) that there are forms present in which two "spore-bodies" are fused together, not in juxtaposition, with their bacillary portions issuing out at opposite poles. They are not so commonly met with as the single form. With the above characteristics it is difficult to regard these bodies in any way as degenerative. The bacillary, or rod portion, of the organism varies in length and in staining power. The long forms[5] may have more than one spore-body in their length. In their manner of staining they are to be found in all stages, from not staining at all with carbol-fuchsin to being firmly acid-alcohol-fast.

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[1] Cultivation of the Tubercle Bacillus: Change in Form by Growth on Sperm Oil and Glycerine-Egg Medium, THE LANCET, Sept. 19th, 1914, p. 739.

[2] These changes are, of course, not peculiar to the oil media. One often sees similar "abnormal" forms in old cultures on other media. For instance, I have a culture of human bacilli on Dorset's medium. It had grown very well, but had been allowed to become dry. When examined at a growth of five months the rods had grown for the most part longer; they showed all stages from not taking the stain at all to well-stained segments, and there were an enormous number of granules present, especially noticed after being decolourised (acid-alcohol). A slide fixed with a saturated solution of corrosive sublimate is not different from one fixed by passing through flame.

[3] At the best the term, in its reference, is not a good one.

[4] 5 per cent. is not the limit. A strain of bovine is growing well on 8 per cent. crude oil and 5 per cent. glycerine.

Besides the above, one meets forms identical with those of the original culture apparently unchanged some two to three weeks after a peritoneal injection. In general, from one's present experience, it appears (see above) that the longer the animal lives the more the above forms tend to assume or become the ordinary rod form; they have been obtained in pure culture from the animal tissues.

Members of the streptothrix group are known to acquire acid-fast characters with age.

I wish to express my sincerest thanks to Mr. A. R. Smith, M.Sc. Lond., chemical expert to Messrs. Joseph Watson and Sons, soap manufacturers, Leeds, for the suggestion of the use of a liquid wax. Sperm oil, being a liquid wax, was accordingly chosen. In the earlier part of this work solid waxes were added to agar—e.g., beeswax, gondang, pisang, carnauba, Chinese wax, some with glycerine and some without. As might be expected, the waxes did not mix[6] with the agar. In spite of this growth occurred slightly on bees' and Chinese wax, an insect wax. I also desire to acknowledge my indebtedness to Professor A. E. Boycott, for giving me permission, and all facilities, for performing the animal experiments of this work in his laboratory, as well as to Mr. A. G. R. Foulerton, of University College, London, and Dr. J. C. G. Ledingham, of the Lister Institute, for kindly giving me cultures of streptothrices and tubercle bacilli.

The Joint Hospitals Pathological Department, Manchester.

PNEUMOCOCCAL INFECTIONS TREATED WITH AUTOGENOUS VACCINES.

By NATHAN RAW, M.D. Durh., M.R.C.P. Lond.,
LIEUTENANT-COLONEL, R.A.M.C. (T.); SENIOR PHYSICIAN, LIVERPOOL MERCHANTS' WAR HOSPITAL.

The following is a brief note of three cases of very virulent pneumococcal blood stream infection, in which, in my opinion, the patients would certainly have died but for the employment of autogenous vaccines.

The great mortality from pneumonia and the disappointing results in a great many cases from ordinary medicinal treatment compel us, as a profession, to employ every means in our power to minimise this heavy fatality, and I am convinced that in a great many cases (I candidly admit, not in all) we have in vaccine a valuable remedy which will, if given in the early stages of the infection, turn the scale in favour of recovery.

During the last five years I have treated in hospital and elsewhere 310 cases of pneumonia with vaccine with 42 deaths, or a mortality of about 13 per cent. In many of these cases vaccine was administered on the second or third day of the disease, and was given every four hours or at longer intervals, according to the severity of the case, and although the results have not always come up to our hopes and expectations, yet I have never once observed any unfavourable symptom follow the use of vaccine in whatever dose it has been administered.

The much debated question as to whether or not a vaccine should be given in the course of an acute infective disease must, in my opinion, be answered in the affirmative, and during a recent visit to France I was much interested to find that acute cases of typhoid fever with high temperature were being treated with antityphoid vaccine with excellent results, and I feel sure that in the near future this form of treatment will become more generally used by physicians.

A vaccine to be potent ought to be autogenous—that is, it should be prepared from the sputum or blood of the patient—and if this can be prepared quickly it can often be used with good effect.

I will briefly mention three very severe pneumococcal infections which were treated as a last resource by autogenous vaccines, and, I am glad to say, successfully.

Case 1.—A young man, aged 30, was seen in consultation with Dr. Williams. He was suddenly attacked with acute lobar pneumonia of the right base, which rapidly spread upwards, and in a couple of days the other lung was involved. The toxæmia was severe, the temperature reached 105° F., and the pulse-rate was 160. In addition to general treatment he had several injections of stock pneumococcus vaccine and after a great struggle up to the ninth day he had a favourable crisis. Six days after the crisis he developed a large fluctuating swelling in the right lumbar region, which on aspiration was found to contain thin creamy pus full of pneumococci. The swelling was freely incised and drained and was followed by similar abscesses in the neck, the left elbow, and, finally, an enormous swelling over the left hip. This was opened and drained by Mr. D. Douglas-Crawford. About this time the patient commenced to expectorate a large quantity of similar pus, and it was evident that he had an abscess on the right lung. I inoculated a mouse at the Liverpool University, which died in 24 hours from septicæmia. From the heart's blood a pure culture of pneumococcus was readily obtained and a vaccine was prepared. In all Dr. Williams gave him 16 injections of this autogenous vaccine, commencing with 50 millions and rising to 100 millions at a dose. The patient became alarmingly thin and wasted, but after several months of suffering, during which at many times he was not expected to recover, he slowly rallied and is now quite well, with the exception of a little restricted movement of his hip-joint. In this case the improvement only showed itself after the autogenous vaccine was commenced, the patient's condition not being influenced one way or the other by the homologous vaccine.

Case 2.—A female, aged 25, was seized on the onset of her confinement with a very severe rigor and pain in her right chest. The child was born in a few hours, but the mother rapidly became delirious, with a temperature of 105·2° F. and a pulse-rate of 144. Pneumonia supervened in the right lung, with complete consolidation of all lobes. The patient was in a critical state for eight days, and Dr. James Marsh, of Atherton, with whom I saw the case, remained in the house for over two weeks. Several injections of homologous vaccine were given to supplement the ordinary restorative treatment, and apparently with good effect. On the twelfth day she developed a painful swelling in the left shoulder-joint, extending down the arm and pointing over the bicipital groove. This was opened and drained, and from the pus, which was pneumococcal in appearance, I inoculated two mice at the

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[5] Some of these rods may be undergoing degenerative processes.

[6] The difficulty was overcome by adding a little neutral soap, but the bacilli did not grow.

University, and from the blood obtained a vigorous culture of pneumococcus. A vaccine from this culture was prepared and given in doses of 100 millions daily, as the case was desperate. In two days another large swelling appeared over the left hip, which tracked down the thigh under the fascia lata; this was also opened and drained. The pus contained enormous numbers of pneumococci. The patient had in all 14 injections of autogenous vaccine, and finally she made a good recovery. There is still some stiffness with adhesions in the left shoulder, but otherwise she bears no trace of her virulent infection.

CASE 3.—A girl, aged 16, was admitted to the hospital suffering from acute lobar pneumonia with great pain and distension of the abdomen. The pneumonia ran a very acute but short course and the crisis occurred on the fifth day. The abdomen being still very painful and tender to pressure it was thought necessary to explore it. On opening it in the middle line a large quantity of creamy pus escaped, which under the microscope was found to swarm with diplococci and well-marked capsules. Two mice were inoculated and a vaccine was prepared. The abdomen was drained for ten days and after six injections of autogenous vaccine the discharge ceased and the patient made a slow but complete recovery. In the course of her illness she developed puffy swellings over both elbows and the right shoulder. These swellings gave every appearance of suppuration, but after constant fomentation with boracic lotion they slowly subsided and entirely disappeared.

I am convinced that we have in pneumococcus vaccine a valuable aid in the treatment of pneumonia, and although not a specific remedy it ought always to be used in those cases of a virulent type which threaten the life of the patient.

Liverpool.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

DYSPEPSIA OR ULCER?

BY I. B. MUIRHEAD, M.D., C.M. GLASG.

THE following case illustrates a point in the diagnosis of gastric ulcer hitherto little noticed. Whilst emphasising the differences of opinion which still divide the profession with regard to the question of operation, it suggests that localised pain, associated with diminishing weight, may come in many cases to be looked upon as a sufficient indication for surgical interference.

The patient, a woman aged 40, was seen on Sept. 21st, 1914. Three months previously she began to suffer from pain after eating, vomiting, constipation, and failure of strength. Her weight had fallen from 9 st. to 6 st. Vomited matters were usually grey or whitish in colour, occasionally darkish brown; contained no blood. No blood passed from bowel. Inability to procure sufficient food might have had a share in causing the illness, but this was denied very strenuously. The extreme emaciation, languid look, feebleness, and obvious anæmia were striking. In the abdomen, beyond tenderness on palpation, nothing abnormal was found. The position of the pain centre was, however, rather out of the common. It was definitely fixed at the junction of the upper and middle thirds of the line separating the left lumbar and umbilical regions. Here pain after eating was chiefly felt, and this was nearly always the situation of the pain, which led up to the attacks of vomiting. It may be stated that while later pain was frequently complained of elsewhere, the position mentioned, somewhat above and to the left of the umbilicus, was always recognised by the patient as the seat of her chief and permanent pain. No enlargement of the spleen or lymphatic glands; urine normal.

From Sept. 21st to Nov. 4th treatment relieved both pain and vomiting up to a certain point, but the decline of strength and weight showed no improvement. It therefore became obvious that, if surgical treatment was to be given a chance, the time had arrived. She accordingly went to hospital, with a certificate that, in the opinion of her medical attendant, she was suffering from an organic gastro-intestinal trouble. Though the certificate did not mention operation, the patient understood my views and the object of her visit. At the hospital three separate examinations, each lasting about a quarter of an hour, were conducted by different members of the staff, whose unanimous conclusion was that "they could find nothing beyond a history of dyspepsia and constipation."

As already stated, the patient denied that she had ever vomited blood, and down to Nov. 4th repeated examinations failed to discover a single unequivocal hæmatemesis. Almost immediately on returning from hospital she began to vomit blood, and continued to do so in considerable though diminishing quantities for about a week with the usual debilitating effects, accentuated by her already reduced state. From Nov. 10th to 15th, and again on the 21st, dark tarry motions were passed. After the 22nd no blood appeared externally, she vomited seldom, had comparatively little pain, and took nourishment fairly well. Apart from a slight tonsillitis from Nov. 27th to Dec. 3rd the lull in the acute symptoms continued till the morning of Dec. 11th, when rather severe abdominal pain was again complained of. At 11 A.M. on that day her appearance suggested a recurrence of bleeding, her pulse was quick and feeble, and her breathing laboured. She died the same afternoon. A necropsy was refused. In conclusion, I should like to make mention of the services rendered by the King's nurses.

Stoke Newington, N.

NOTE ON THE USE OF ANTISTREPTOCOCCIC SERUM IN ACUTE BRONCHITIS.

BY J. G. HAYES, L.R.C.S., L.R.C.P. IREL.

I DO not know if antistreptococcic serum has been widely used in the treatment of acute bronchitis, but a few remarks on my own personal experience of its use may not be out of place. First of all, I believe I am right in saying that in the majority of cases of bronchitis, and particularly the more severe forms, some strain of streptococcus plays an important rôle; anyway, in cases where I have had the sputum examined streptococci have nearly always been found. The following are examples in which I have used the serum:—

CASE 1.—The patient was a woman, about 30 years of age, the subject year after year for some considerable time of recurrent attacks of very acute bronchitis associated with high temperature and great prostration, necessitating confinement to bed for nearly two months at a time. On the occasion of an attack in the beginning of 1913, which was a particularly severe one, autogenous vaccines were used, and though the doses were below the average they were followed by such dangerous reactions that they had to be discontinued after the fourth injection. In 1914 the patient developed symptoms that suggested a recurrence.

There were rigor, pains in the back, rise of temperature, cough, and general malaise; also faint râles quickly became evident over both lungs. I determined to give a polyvalent antistreptococcic serum with as little delay as possible, so that evening, at 9 o'clock, I gave 3000 units of antistreptococcic serum, the temperature being then 102·4° F. The patient had a comfortable night and on the following morning the temperature was 99·6°. It rose towards evening again to 101·4°, so I repeated the injection of serum, and after another comfortable night the morning temperature read 98·8°, above which it made no further rise. Some ten days later, when the patient was up and about, symptoms recurred, but the temperature only reached 100·8°. However, I again administered serum precisely as before, with the result that the following day the temperature was normal, and has remained so ever since.

CASE 2.—The patient, a girl aged 19 years, developed acute laryngitis followed by symptoms of general bronchitis. When I saw her the temperature was 103·2° F. Polyvalent antistreptococcic serum, 3000 units, was administered. On the following morning the temperature was 101°; no rigors; cough soft; expectoration easy. The temperature that evening was 99·8°, and from this time on there was a general abatement of symptoms with rapid recovery.

CASE 3.—The patient was a man, aged about 63 years, the subject of chronic bronchitis with frequent acute exacerbations during the winter months. I saw him for the first time in the early stages of one of these acute attacks. I gave him the serum as in the previous cases, which was followed by an improvement that was progressive and maintained, so that no repetition of the treatment was necessary.

From these results I formed the following conclusions: 1. That the streptococcus was the main cause of the toxæmia in most case of acute bronchitis. 2. That, giving an antistreptococcic serum in the early stages will increase the blood resistance against the micro-organism that is likely to cause the most serious trouble. 3. That the serum may be given and repeated without the fear of such dangerous reactions as I, at any rate, have experienced with vaccines. 4. Serum has the great advantage that it can be got at once, where a vaccine, which if it is to be any good, must be autogenous, and cannot be secured for some days.

It would be interesting to have the opinions of others on this subject, for certain it is that, provided proper aseptic precautions are carried out, the early treatment by serum injection is associated with very little risk, and will help to combat a very common and dangerous enemy which is ever waiting to find an entrance to the human body. The treatment applied to other acute diseases may give similar results, but the effect on these cases impressed me considerably.

St. James's-place, S.W.

EDINBURGH SICK CHILDREN'S HOSPITAL.—The annual meeting was held in the board-room of the hospital on March 17th. Mr. Charles I. G. Paterson, vice-chairman of directors, presiding, referred to the absence at the front on military service of their chairman, Colonel James Clark. He took the opportunity of publicly thanking Colonel and Mrs. Clark for all they had done for the hospital. Fifty years ago, he said, they had only 20 beds; now they had 120, and 2166 children had passed through the wards in the year. The out-patient departments showed the equivalent of 27,000 visits. The year's expenditure was about £9600, but still there was a deficit of £3800 which had to be met out of the legacies. Dr. A. H. Freeland Barbour, President of the Royal College of Physicians of Edinburgh, moved a resolution commending the Children's Hospital to the liberality of the public. The care given to children reduced the mortality of the city and might preserve to the country a Jellicoe or a Kitchener.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF DERMATOLOGY.

Exhibition of Cases and Specimens.

A MEETING of this section was held on March 18th, Dr. J. J. PRINGLE, the President, being in the chair.

Dr. J. A. NIXON showed the Parasite "Pediculoides Ventriculosus" responsible for the disease known as "cotton-seed dermatitis," an epidemic of which occurred among dock labourers in Bristol in January, 1915, the parasite probably being the same as that causing "barley itch."—Dr. A. WHITFIELD demonstrated the Acarus obtained from a specimen of Copra which was responsible for the disease known as "copra itch"; the lesions were almost identical with those described by Dr. Nixon and yielded readily to treatment by sulphur ointment. It was surprising that although the disease was well known to practitioners in the East End of London it was not generally recognised in the hospitals.—Dr. J. M. H. MACLEOD had seen one case of copra itch and one of cotton-seed dermatitis. He had come to the conclusion that in the latter condition the acarus was a parasite of a caterpillar found in great abundance in the cotton seeds.—Dr. GRAHAM LITTLE and Dr. G. PERNET discussed the cases.

Dr. J. H. STOWERS brought up two brothers with Alopecia due to over-dosage of X rays in the treatment of ringworm. —Dr. DUDLEY CORBETT, Dr. KNOWSLEY SIBLEY, and Dr. PERNET discussed the prognosis.

Dr. PERNET showed a case of Iodide Eruption with much pigmentation in a man suffering from syphilis who had treated himself with a familiar "blood mixture."—The PRESIDENT, Dr. WHITFIELD, Dr. A. EDDOWES, and Dr. PARKES WEBER discussed the case.

Dr. PERNET also showed a typical case of Non-ulcerating Erythema Induratum in a girl aged 15.—The PRESIDENT and Dr. GRAHAM LITTLE made observations on the case.

Dr. SIBLEY brought forward a case of Nodular Lupus Vulgaris complicated with Lymphangitis in a girl aged 18, in which the microscopic appearances were unusual and the von Pirquet reaction negative.—Dr. WHITFIELD considered the sections to be typical of lupus vulgaris. He thought that the disease was likely to be aggravated by the streptococcal lymphangitis.—The case was further commented on by Dr. H. G. ADAMSON, Dr. S. E. DORE, Mr. J. E. R. MACDONAGH, and Dr. DOUGLAS HEATH.

Dr. DORE and Dr. KINNIER WILSON showed a case of probable early Anæsthetic Leprosy in which there was dissociation of sensation in the lower extremities with thickening of the skin over the knuckles, blisters between the toes, and dystrophy of several nails both of hands and feet.—Dr. WHITFIELD suggested the Wassermann test in addition to a tuberculin injection.—Dr. PARKES WEBER and Dr. PERNET favoured the diagnosis of leprosy.

Dr. ADAMSON showed a case of large Circinate Lichen Scrofulosorum in an adult.—The PRESIDENT remarked on the rarity of this condition in adults as compared with its frequency in children.

Dr. ADAMSON also showed a case of Macular Atrophy and accentuated the toxæmic origin of the condition, which was often due to syphilis or tuberculosis.

Mr. H. C. SAMUEL exhibited a Linear Nævus on the thorax, neck, axilla, and forearm of the left side. The condition had not manifested itself till 16 years of age.—Treatment by means of carbon dioxide snow was discussed by Dr. GRAHAM LITTLE and Dr. ADAMSON.

Dr. PARKES WEBER demonstrated a case of Generalised Atrophic Sclerodermia with Sclerodactylia in a middle-aged woman. He made special reference to the absence of pulsation in the dorsalis pedis arteries, an observation which was confirmed by Dr. STOWERS.

Dr. GRAHAM LITTLE brought forward a boy with Simultaneous Herpes Zoster of the third and eighth left dorsal segments, the intervening areas being free from lesions; he considered the case unique.—The PRESIDENT, Dr. A. M. H. GRAY, Mr. SAMUEL, Dr. ADAMSON, and Dr. HEATH spoke on the subject.

Dr. GRAHAM LITTLE further showed (1) a case of Epithelioma of the thigh in a woman, aged 63, resulting from an injury to a congenital pigmentary patch; and (2) a case of Dermatitis Herpetiformis in a boy, chiefly affecting the neck, chest, and groins.—The PRESIDENT commented on the difficulty of differentiating between Duhring's disease and pemphigus, and Dr. ADAMSON concurred.—Dr. HEATH agreed with the exhibitor's diagnosis, and advocated the exhibition of arsenic.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Exhibition of Case of Lupus Vulgaris.—X Ray Treatment of Ringworm.—Prophylactic Inoculation against Tuberculosis.

A MEETING of this section was held on March 5th, Dr. W. G. SMITH, President of the Academy, being in the chair.

Dr. C. M. O'BRIEN showed a boy, aged 13, who was suffering from a very pronounced form of Lupus Non-exedens for the last nine years. Although widespread, the face and mucous membrane were practically free. Since admission on Oct. 8th, 1914, the boy had gained 11 lb. For almost three years he had received at the London Hospital one hour's exposure of Finsen light on five days of the week. Since Oct. 8th, 1914, he had had three sittings per week of 70 minutes each. The most that could be claimed was that it stopped the spread. Dr. J. Griffiths, of Cambridge, had inoculated a guinea-pig from the lupus tissue with positive results.

Dr. E. J. M. WATSON read a paper on X Ray Treatment of Ringworm.—Dr. SMITH said the whole point of X ray treatment was that this method had reduced to weeks a period of treatment which was formerly measured in months. The only change in X ray treatment in recent years seemed to be the substitution of frequent exposure to small doses for larger doses given at longer intervals. To epilate a child's head was a troublesome process, and he suggested that X ray treatment was forceps treatment abbreviated. He maintained that no case of ringworm should be certified as safe so long as one diseased hair could be found.—Dr. W. G. HARVEY could support Dr. Watson's statement that occasionally cures occurred without epilation being complete. The diseased hairs were more freely epilated than the healthy. He had usually employed an antiseptic ointment, believing its effect to be mechanical.—Dr. O'BRIEN said that notwithstanding diversity of opinion as to the effect of X ray treatment on ringworm, the statistics of Paris should leave no doubt as to the efficacy of the procedure. Sabouraud held that at the end of 1906, after three years' work, the municipality of Paris had gained financially 2½ millions of francs by the adoption of X ray treatment. He had made it a *sine quâ non* before treating a child under the age of 3 to get the consent of the parents in writing, as it had been suggested in some cases treated in London that the exposure to X rays had some effect on the brain of a child.—Dr. M. R. J. HAYES, in regard to permanent alopecia as a result of the treatment, suggested scrupulous accuracy in the measuring of the dose and caution in the use of old tubes in the treatment of ringworm, as one could not be sure of their vagaries. Tubes which had been used for many hours in a period of months would give off rays greater than one would expect. He had used cataphoresis with copper sulphate ions, but this was somewhat troublesome and was more painful.—Dr. WATSON, replying, said his practice was to expose each area with the dose of one Sabouraud for a quarter of an hour. If one's tube was new and working properly he did not think there was any danger of baldness even in very susceptible cases.

Dr. W. M. CROFTON read a paper on Prophylactic Inoculation against Tuberculosis, and said that practically everyone who attained to adult years got infected with tuberculosis. Two objects presented themselves: (1) to prevent the microbe obtaining access to the patient; (2) to make the patient's tissue unsuitable for the development of the microbe. While it appeared impossible to prevent the microbe gaining access, only a proportion of those infected developed the disease to a serious extent. The recovery of the majority was due to a normal resistance; therefore the problem would be solved if the resistance of the minority could be made and kept normal. Low resistance was due to (1) bad hygienic surroundings; (2) lowering of resistance by other microbes; and (3) inhibition. A normal resistance might be overcome by a virulent infection. General sanitary measures, while they kept down morbidity and mortality to a certain level, would not entirely prevent disease. The only method was to render the soil unsuitable by prophylactic inoculation. The probability of the success of this measure and the method of carrying it out were discussed. T.R. was used dissolved in liquid paraffin containing 2 per cent. benzoyl chloride. The doses were given at intervals of a week, increasing ten times each administration. They began at one-millionth of a milligramme and rose to one-thousandth for infants. Ten times these doses might be given to older children, and for adults an extra dose of one-tenth milligramme might be given. The test of success would be the reduction of case incidence and of mortality. The experiment was innocuous, cheap, and easily carried out. A beginning might be made in families in which tuberculosis had occurred.—Dr. T. G. MOORHEAD said that he had come to the conclusion that tuberculin as a prophylactic remedy against tuberculosis was not of much value. As one looked around, two types of infective disease were recognised. Of one, small-pox was the type, and of the other tuberculosis. In tuberculosis it would seem that a sufficient amount of antitoxin was not produced to prevent a patient from getting a second attack. A survey of such remedies showed that certain of them had been permanently accepted as useful—e.g., vaccination for small-pox and 606 for syphilis; but of tuberculin, although it had been before the profession now for over 20 years, the value had not become admitted, and at the Congress of Medicine much doubt was expressed as to its utility.—Professor B. J. COLLINGWOOD asked if it was not possible that the liability to tuberculosis which exists in certain individuals is due to the fact that they do not possess the power to produce antibodies to prevent tuberculosis?—Dr. SMITH and Dr. LAW also spoke.

ÆSCULAPIAN SOCIETY.—A meeting of the above society was held in the Metropolitan Hospital on March 19th, Dr. David Ross, a Past-President, being in the chair.—The resident staff showed some interesting cases and skiagrams.—Mr. W. S. Soden showed: 1. A man with a large mass in the abdomen, found on operation to be fixed to the abdominal wall. Gumma was suggested. 2. A man, aged 50, with rapidly growing Epithelioma of the Soft Palate on the left side, treated by diathermic cautery with excellent results. 3. An anæmic man with Chronic Laryngitis of doubtful origin, syphilitic or tuberculous. Wassermann reaction negative even after provocative dose of neosalvarsan. No tubercle bacilli were found. 4. A man, aged 26, with Comminuted Fracture of the Right Clavicle. 5. X Rays of Shrapnel Wounds showing metal remaining after healing of wounds.—Mr. C. K. Sylvester showed: 1. Skiagram of a Bullet in the Muscles of the Back. 2. Case of Cerebro-spinal Meningitis, no loss of abdominal reflexes, and persistent Kernig's sign. Diplococcus found only on third examination. Three grains of soamin were administered on March 4th and two grains on March 10th, followed by fall of temperature for two or three days. An unexplained rise of temperature proved to be the onset of measles. 3. Spasm of Cardiac End of Œsophagus. History of vomiting for two years. A bismuth meal revealed great dilatation of the œsophagus ending in a cone-shaped shadow. No evidence of new growth. Jejunostomy suggested, and later when the condition improves gastrostomy.—Mr. Mawer showed: 1. A boy, aged 14½ years, with swelling under the mandible on the left side, noticed by him since Dec. 14th. After discussion a cystic hygroma was diagnosed. 2. A small female child, aged 4 weeks, with a cystic swelling of the left buttock, which was agreed to be an anococcygeal cyst. Treatment was deferred until the child had acquired control of her anal sphincter.—Mr. Dive showed: 1. A woman, aged 54, with Adiposis Dolorosa. The treatment consisted of the administration of thyroid and pituitary extracts. 2. A child, aged 7 months, with painless bony swelling of two weeks' duration of the proximal phalanx of the right fourth finger. Diagnosis: T.B. dactylitis, confirmed by X rays. 3. A child, 6 weeks old, suddenly noticed to have a swelling of the right elbow; false paralysis of that arm. Diagnosis of epiphysitis.

Reviews and Notices of Books.

Feeble-mindedness : Its Causes and Consequences. By HENRY HERBERT GODDARD, Ph.D., Director of the Research Laboratory of the Training School of Vineland, New Jersey, for Feeble-minded Girls and Boys. New York: The Macmillan Company. 1914. Pp. 599. Price 17*s*.

THE main object of this book, as stated in the first chapter, is to consider the problems of crime, pauperism, intemperance, and the social evil from a new standpoint; and the new hypothesis with which the author starts may be shortly summed up as follows: There are all grades of responsibility—or all grades of intelligence—from zero to the highest; that responsibility varies according to the intelligence; that intelligence is a relative matter, and certain people may therefore be responsible in some environments while they would be irresponsible in others; and that in order to grade responsibility with a view to social work and treatment the intelligence must be measured and an attempt made to draw the line between normal intelligence and defect. The author proceeds to state that persons "below the line of normal intelligence" have been at different periods called by different names; being originally styled "idiots," later "imbeciles," and, still later, "feeble-minded"; and that now, by common consent, the custom has grown up of applying the term "feeble-minded" to the highest grade of defectives only, confining the two other terms, "imbecile" and "idiot," to the middle and lowest grades respectively. This, he correctly says, is now the common classification in England, and he also mentions that, as a general term for all groups, the word "aments" is sometimes used. But in America the word "feeble-minded" has been for long widely used both as the generic term for all and for the highest grade alone; and the author informs us that since what is known as the "Binet measuring scale of intelligence" and the grading of children by their "mental age" have been adopted in America, the term "moron" has been substituted for "feeble-minded" as the designation of the highest grade. It is claimed that the study of "morons" in American institutions for the feeble-minded has resulted in the drawing of a line which marks the degree of intelligence to which these people cannot reach, and are consequently incapable of functioning properly in a highly organised society.

Following on these preliminary statements, and in relation to them, the social problems of alcoholism, crime, prostitution, and pauperism are successively considered.

For the rest, this book consists chiefly of a detailed series of 327 unselected cases, not of "morons" only but of all ages and grades of defect; and it is said that the theories presented and the conclusions arrived at have been merely those that were suggested by the data themselves. Among the chief conclusions that have been forced on the author by the figures is that normal intelligence is a "unit character," transmitted in true Mendelian fashion.

We have no space to deal at length with the elaborate records of cases which occupy by far the largest portion of this book. Whether or no the conclusions appeal to thoughtful (or, according to the peculiar orthography which pervades this work, *thotful*) readers, these records will be of interest to the clinical student of mental defect. But the classification of cases into several groups, such as hereditary, probably hereditary, neuropathic, accidental, and so forth, seems to us to be very superficial; to involve confused notions regarding the meaning of heredity; and to consist, in a great degree, of mere opinions. To give one instance, a certain boy classed as a high grade (moron) was the only living child of a mother who had had eight miscarriages or stillbirths. The mother was a "normal," of a normal family; the father was also normal, "but evidently a carrier of defect, since his mother was feeble-minded. He was alcoholic, and went with a fast set, which undoubtedly accounts for the miscarriages. To confirm our theory that the father must have been a carrier of 'feeble-mindedness,' we have only to look at an older brother who is feeble-minded, and married a feeble-minded woman. ...... There is no doubt that this boy has inherited the defect thru his paternal grandmother."

One of the most glaring faults in this book is the elementary mistake of regarding "intelligence" as synonymous with "mind," an error which marked also the essay of Professor Karl Pearson on this subject, which was reviewed in THE LANCET of Jan. 2nd. Indeed, Professor Pearson appears to us to have had in view the work now under consideration when writing his paper, in that he not only pointed out that there are other factors, such as the "moral" factor (which he does not consider "mental"), in the complex commonly known as "feeble-mindedness," but also set forth his own refutation of the teaching that mental defect is to be regarded as a Mendelian trait due to the absence of the "unit character" of normal-mindedness from the germ-plasm. We agree fully with Professor Pearson in his demolition of this theory of a "unit character" in relation to feeble-mindedness, and thus may pass over this doctrine, which is emphasised so strongly in this book, without further notice.

The diagnosis of "feeble-mindedness," or "moronism," is not a matter concerning the intelligence only. It is a matter of *mental defect* (in the proper sense of that word), as evidenced chiefly by careful observation of conduct and by study of the history of each case, leading to an inference of the incapacity of the subjects to adjust themselves effectively to their social surroundings. We believe that no definite hard-and-fast standard of intelligence alone, such as that adopted by the author, for facilitating clinical work, nor, again, any prescribed method of "standardising judgments as to the grade of social inefficiency which shall involve segregation," as hoped for, but not indicated, by Professor Pearson, is to be reached or sought for. On the other hand, we hold that, in spite of inevitable differences of opinion regarding some cases, a careful history and prolonged observation of most alleged instances of feeble-mindedness will enable most students of mental defect to come to a right and practically useful conclusion. We agree to a certain limited extent with the author's views as to some causal relation of feeble-mindedness to crime, alcoholism, prostitution, and pauperism, but believe that the far-reaching conclusions arrived at by him are not borne out by facts, and would be very misleading if regarded as duly established.

We have not entered here into the question of the "heredity" of feeble-mindedness because there is a general agreement, whatever views may be held as to the nature and mode of heredity, that there is a vastly greater probability of offspring with marked mental defect being born of forebears with a similar defect than of those not so characterised. There is, of course, much evidence to this effect in the interesting cases reported in the book before us; but we find nothing that can be regarded as of fresh scientific or practical import.

The Anatomy of the Human Skeleton.

By J. ERNEST FRAZER, F.R.C.S. Eng., Lecturer on Anatomy in the Medical School of St. Mary's Hospital; formerly Lecturer at King's College, London; Senior Demonstrator at the Medical School of St. George's Hospital; and Examiner in Anatomy for the Conjoint Board of the Royal Colleges of Physicians and Surgeons. With 219 illustrations, many of which are coloured. London: J. and A. Churchill. 1914. Pp. 274. Price 21*s*. net.

IT is but rarely that a reviewer experiences the real pleasure afforded by the reading of a book on human anatomy which may truly be termed new—new both in its illustrations and in its text. But such a book is that produced by Professor Frazer, which possesses the added charm that in the very manner of treating the subject the author has struck out new lines for himself. Among the flood of new editions and reprints which it is our lot to wade through, this book comes with its novelty as a particularly refreshing thing; and it must be remembered that if this sense of relief should unconsciously colour the impressions of the reviewer, it is likely also to have its influence upon the student, perhaps wearied by the monotony of his old companions. This is a virtue difficult to over-estimate.

Professor Frazer has more nearly than any recent writer "made the dry bones live" for the student of anatomy, if we may be pardoned the old quotation. He has placed the bones before the student as functioning parts of a living body; a mass of mere description of surfaces and borders is avoided, and the bone is studied in all its complex relations to the surrounding structures. It is safe to say that the knowledge gained by the student from following such a course is far more real, and far more likely to be useful than that gained by any method such as the one (alas, ascribed originally to the great Vesalius!) of carrying dried bones at all times in the pocket. We think, perhaps, that the book does not end quite so well as it begins; that the treatment of the skull is not carried out quite so fully as is that of the rest of the skeleton; but this must not be taken as saying that the work here is not done in an excellent and sensible manner.

The illustrations are the work of the author and they are bold and striking, and the text is clear and ample. Two things will, we think, be criticised by a lecturer on anatomy, who is regarding the work as the most recent text-book of the science of osteology, rather than as a work from which the medical student may learn of the human skeleton. In the first place, few authorities are named and practically no references are given to the literature; in the second, the old terminology has been retained. It is perfectly obvious that this is deliberate on Professor Frazer's part, and we commend his attitude; for if we regard the work as a handbook for medical students, it is not difficult to see that these very features are in reality positive virtues in such a book. Professor Frazer is to be congratulated upon the production of this volume, for in it the medical student has been provided with a book on bones which he can read with interest, which will put him on the right lines for finding out more for himself, and will give him knowledge that will serve him long after his student days.

The whole "get up" of the book is good—we have here, in short, one of the best additions to the student's library made of recent years.

The Practice of Surgery.

By JAMES GREGORY MUMFORD, M.D., Lecturer on Surgery in Harvard University, &c. Second edition, thoroughly revised. With 683 illustrations. London and Philadelphia: W. B. Saunders Company. 1914. Pp. 1032. Price 30*s*. net.

THE present edition of this book has been fully revised so as to record the progress and changes that surgery has undergone in the four years since it first appeared, and we wish to reiterate the very favourable opinion that we expressed of the book at that time. The reader will be impressed with the tone of the author, and will recognise that he writes from a wide experience and with a calm judgment capable of estimating correctly the new facts, theories, and methods which are always being brought forward, though there may be some things in the book with which he can hardly agree. The author states in his preface that he has read 70 reviews of his book and that his reviewers do not always agree with him, but adds that neither do they always agree with one another, a comment which shows the book to be a really thoughtful work maintaining a high standard.

The illustrations are all that can be desired. In our former review we referred to the frontispiece which represents the changes that have taken place in surgery, one picture showing the first public demonstration of ether anæsthesia in the Massachusetts General Hospital on Oct. 16th, 1846, and the other showing an operation in the same hospital in May, 1908. The difference is very striking, but some surgeons of to-day would say that even the latter picture does not show the practice of 1915.

Carcinoma of the Thyroid in Salmonoid Fishes.

By H. R. GAYLORD and M. C. MARSH. With 55 plates. Buffalo, N.Y.: State Institute for the Study of Malignant Disease. 1914. Pp. 524.

THIS large quarto monograph falls naturally into two parts: one dealing with the histology and morbid anatomy of thyroid enlargement, and the other devoted to a discussion of the conditions associated with varying frequency of the disease and experimental variations of these conditions. The plates refer almost entirely to the first part, and give a very complete picture of the structure of the conditions from the earliest hyperplasias to the most advanced growths. Being mostly prepared from microphotographs they show the limitations of this method of illustrating histological work, the most successful photographs being those taken with very low powers. While these are all admirable, the same cannot be said of the higher magnifications. This indistinctness is particularly unfortunate in the case regarded as a visceral metastasis from a thyroid tumour. The importance assigned to this case by the authors makes it all the more regrettable that only presumptive evidence could be adduced of the coexistence of a thyroid tumour in the fish in question. The conclusion is drawn, from the completeness of the series of transitional forms between the slightest degrees of hypertrophy and the large atypical destructive growths, that "endemic goiter and carcinoma of the thyroid in the Salmonidæ are the same disease."

From their study of the conditions under which the disease appears in fish hatcheries, and from their experiments, the authors conclude that this disease is due to a water-borne virus, and that the liability of fish to it is enhanced by artificial proteid feeding, overcrowding, and other factors. In addition to the beneficial effect of iodine already noted by Marine, mercury and arsenic are also stated to influence the condition in the same way. The numbering of the pages seems to have been altered in the press, as the authors' references to their own observations are all incorrect. This adds a needless difficulty to the task of following their arguments.

Water Supplies: Their Purification, Filtration, and Sterilisation.

By SAMUEL RIDEAL, D.Sc. Lond., and ERIC K. RIDEAL, B.A. Cantab., Ph.D. Bonn. With numerous illustrations and tables. London: Crosby Lockwood and Son. 1914. Pp. 274. Price 7*s.* 6*d.* net.

THE subject of water-supplies is approached in this book mainly from the standpoint of modern methods of purification, and as the advances made in this direction have been considerable during recent years, particularly in America and this country, Dr. Samuel Rideal and his son, Dr. Eric Rideal, have done good service in furnishing us with a handbook that takes into account these modern developments. The chapter on storage affords a good example of the comparatively recent steps taken for the preliminary purification of water by this method. "In the case of London alone the storage has been increased in the ratio of 1 to 6·3 in 24 years." Thus under the eight companies the total storage capacity in 1884 in millions of gallons was 1444·5, whereas in 1908, under the Metropolitan Water Board, the storage capacity was 9156·7 gallons. The water stored in such large reservoirs not only parts with its silt but also with the larger portion of its contained bacteria, the majority being carried down by the silt to which they have attached themselves, and the remainder for the most part perishing for lack of adequate food supply and subsequently sinking. These observations emphasise the importance of storage, and lead to the conclusion that in some cases there may be no need to filter the supply.

In regard to the softening of water the ingenious permutit process is described. This artificial zeolite contains the silicates of aluminium and sodium, and when a hard water is passed through a bed of it, the sodium of the permutit is replaced by the calcium and magnesium of the water which now contains sodium carbonate as an equivalent of the calcium and magnesium salts formerly present.

The chapter on sterilisation is very interesting, and includes valuable references to recent applications, a field in which Dr. S. Rideal has laboured successfully. This is succeeded by an account of electrical modes of sterilisation, including a description of certain installations in which the sterilising power of ozone, electrolytic fluid, the direct current itself, and the ultra-violet light of the quartz mercury lamp are described. The section on analysis and interpretation of results is somewhat short, but, of course, this subject shares little in the main theme of the work. The references to literature are copious, and altogether the book gives a very good insight into the present scientific position of water administration.

MISCELLANEOUS VOLUMES.

IN the preface to the *Manual of Instruction for the Royal Naval Sick Berth Staff* (printed for H.M. Stationery Office. 1914. Pp. 507. Price 2*s.*) it is stated that this book has been written for three reasons: to provide a text-book for probationary sick berth attendants; to promote uniformity of instruction at the naval hospitals; and to provide a concise and comprehensive manual for the sick berth staff in preparing themselves for examination for the higher ratings. These objects have been successfully attained, and it would be difficult to find elsewhere so much useful information on the subjects treated of in an equally compact and inexpensive form. (The analogous manual of medical corps training for the army is also very good, but its scope is different.) In the first hundred pages is given a summary of anatomy and physiology, quite sufficient for the purpose, and well illustrated by 70 figures. A few pages follow on bacteriology, and then the main facts of pathology and treatment are plainly set forth in regard to inflammation, hæmorrhage, injuries, poisons, and the chief groups of diseases, so far as is needed by an intelligent and well-trained nurse. Sick cookery and anæsthetics are dealt with, and a list is given of drugs and appliances, with their properties, doses, and uses. The instructions for stretcher-bearers occupy very little space, and there is much less in the way of drill or routine work than in the analogous medical corps in the army. The book is well printed and illustrated. It is not correct to state that proteids are the only foods that form tissues (p. 92), as fatty tissue is of course largely formed from the fatty food that is eaten and partly also from the carbohydrates. It is also not quite accurate to say that spores of bacteria are killed "by the action of the various antiseptics and disinfectants" (p. 101); there are many useful antiseptics that are not actually bactericidal, though no application is truly disinfectant unless it destroys bacteria and their spores. This book is an official publication and anonymous. The author has been most successful in producing a comprehensive manual, admirably adapted for the purpose for which it was written.——Lieutenant-Colonel R. J. BLACKHAM'S *Indian Home Nursing* (Third edition. Simla: St. John Ambulance Association. 1914. Pp. 235. Price 1 rupee), for the guidance of nurses in India, has reached its fifth thousand, which shows that it has been appreciated. It contains the material for the five official lectures of the St. John Ambulance Association, and deals with all nursing matters in quite sufficient fulness. It is not clear what is meant by the period of exclusion (e.g., 16 days in measles) "from the day disinfection has been completed in the case of infected children." The difference between cocoa and coca might have been explained in a book intended for popular use. The carbonic acid present in air is not 4 per 1000 (p. 16). On the whole the book is very useful and trustworthy.

The latest addition to the Pocket Guide Series, price 1*s.* each, published by the Scientific Press, Southampton-street, London, are *The Muscular System* and *Notes on the Nervous System*, the former by Dr. HAROLD BURROWS and the latter by Dr. EDWIN L. ASH. Dr. Burrows gives a brief sketch of the most important features of the anatomy of the skeletal system, his classification being based upon function, while Dr. Ash summarises the main lines on which the nervous system is constructed. Of course an adequate knowledge of both these subjects can be obtained from standard text-books only, but for revision purposes the pocket guides should prove useful to students, and nurses will probably find in the books all that they need. For the benefit of nurses in particular a chapter on the more common diseases of the brain is appended to "Notes on the Nervous System."

An Index to First Aid, by J. M. CARVEL, M.R.C.S., L.S.A., Hon. Associate of the Order of St. John of Jerusalem (London: John Bale, Sons, and Danielsson. Pp. 135. Price 1*s.* net), is described as a vade-mecum for the ambulance worker and all interested in the subject of first aid to the injured, its purpose being to indicate briefly the correct line of action to be adopted by the "first aider" in any particular case, this being facilitated by an alphabetical arrangement of subjects. Such an index of terms and treatment may conceivably be useful to ambulance workers pending the arrival of a medical man, and also as a ready means of refreshing the memory for purposes of study, but the first aid worker if he is to be of real use should have his knowledge at his finger ends. The book is illustrated and interleaved with blank sheets for memoranda.

JOURNALS.

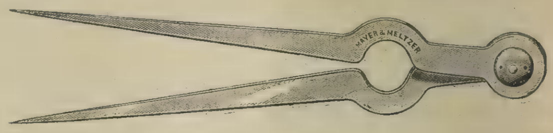
The Indian Journal of Medical Research, Vol. II., No. 2.—This number contains 12 original articles, the first two of which deal with the subject of malaria, one being contributed by Captain E. C. Hodgson, I.M.S., on the incidence of the disease in the recently constituted province of Delhi, illustrated by photographs, maps, and charts; the other by Major E. L. Perry, I.M.S., treating of the endemic malaria of the Jeypore Hill Tracts of the Madras Presidency. Major Perry's paper is illustrated by several plates and diagrams and a map.—The next article is by Captain W. S. Patton, I.M.S., of the King Institute, Madras, who gives the results of the examination of the peripheral blood of 84 patients suffering from kala-azar in the General Hospital at Madras during the 12-month period ended July 15th, 1913.—Two other papers deal also with kala-azar, and both are contributed by Major F. P. Mackie, I.M.S. The first, with a map, describes the progress of the disease in a localised community in the endemic area situated between the Brahmaputra River and the Garo Hills, this region being the oldest known focus of kala-azar in the province of Assam. The second is a note, with an illustrative plate, on some bodies of unknown nature found by Major Mackie in the fæces of kala-azar patients in Assam. This officer has for some time been engaged in investigating the malady in this region, and his note raises the suggestion that this form of leishmaniasis may after all be spread by means of the intestinal discharges of the patient and not by a blood-sucking insect; but obviously further researches are required before any conclusion upon the matter can be reached.—Major A. C. MacGilchrist, I.M.S., in continuation of his previous work, furnishes a third communication on his cinchona derivatives inquiry, giving a synopsis and discussion of our present knowledge of the molecular constitution and pharmacological action of the more important of the cinchona derivatives.—Some observations on the salivary secretion of the common blood-sucking insects and ticks are contributed jointly by Major J. W. Cornwall, I.M.S., of the Pasteur Institute, Coonoor, and Captain W. S. Patton, I.M.S., of the King Institute, Madras.—A culturable, free-living flagellate, and the determination of the lethal value of certain chemicals thereon, form the subject of an article, which is illustrated by a coloured plate, by Dr. Gopal Chandra Chatterjee, assistant bacteriologist at the Medical College, Calcutta. The flagellate in question was found by Dr. Chatterjee in water taken from a tank, and it grew in ordinary bouillon and peptone water in intensely rich culture. The author regards it as possibly a new species of the sub-family Trypanoplasma of the Flagellata.—Major E. D. W. Greig, I.M.S., who has been employed for some time past upon the systematic study of cholera, supplies two papers to this number of the *Journal*, the first dealing with the simultaneous occurrence of cholera and cholera-like vibrios in the tissues of persons suffering from the disease; and on this part of the subject he promises a further contribution at a later date. His second paper is on the hæmolytic action of Indian strains of cholera and cholera-like vibrios.—A joint article by Major W. F. Harvey, I.M.S., and Captain H. W. Acton, I.M.S., treats of methods of estimation of quantity of organisms in suspension, the organism chosen for this investigation being the dysentery bacillus.—Lastly, Major Clayton Lane, I.M.S., gives a detailed description, with eight illustrative plates, of suckered round-worms found in India and Ceylon.—This number maintains well the high practical and scientific standard set by the articles already published in the *Journal* by the officers of the Indian Medical Service.

British Dental Journal.—The issue for March 1st contains an article by Dr. J. H. Sequeira on oral affections from the dermatological standpoint. After referring to syphilis he draws attention to oral tuberculosis and lupus, and then discusses the possible relationship of the erythemata to oral sepsis. Jacquet's hypothesis that alopecia areata was intimately associated with trigeminal irritation does not, he thinks, stand the test of careful clinical investigation.—Mr. W. H. Dolamore has a short note on the value of metal "cap splints" for the treatment of fractured mandibles. He draws attention to several practical points in their manufacture and adaptation, and speaks highly of the results obtained from their use.—Mr. A. Barrett contributes an article on the antiseptic and germicidal value of ether, and Mr. Valentine Kay one on the treatment of cysts.

New Inventions.

BONE GRAFT CALLIPERS.

IN performing a bone-grafting operation it is necessary to have some ready means of accurately measuring the extent of the bed the proposed graft is to occupy. The instrument here illustrated I have found exceedingly useful. It presents three advantages: (1) The character and size is such as to obviate the necessity of introducing the fingers into the wound—a desirable aim in all bone surgery; (2) after the measurement is taken the callipers can be laid aside, without any chance of losing the exact distance ascertained; and (3) the sharp points conveniently mark the limits of the graft in the periosteum of the bone chosen—usually the inner surface and crest of the tibia.



The instrument has been made for me by Messrs. Mayer and Meltzer, Great Portland-street, London, W.

HARRY PLATT, M.S. Lond., F.R.C.S. Eng.,
Surgeon to and Surgeon in Charge of the Orthopædic Department, Ancoats Hospital, Manchester.

ISOLATION HOSPITALS IN CORNWALL.—The Local Government Board has recently requested the Cornwall County Council to consider the inadequate isolation accommodation in the county, especially in view of the likelihood of outbreaks of infectious diseases when soldiers return from the front. The medical officer of health states that, excluding small-pox hospitals, there are nine isolation hospitals in the county and 33 districts are quite unprovided for. A special meeting of the council was accordingly held last week, at which a committee was appointed to consider the subject.

CENTRAL MIDWIVES BOARD.—A special meeting of the Central Midwives Board was held at Caxton House, Westminster, on March 12th, Sir Francis H. Champneys being in the chair. A number of midwives were struck off the roll, the following charges amongst others having been brought forward: Not observing the antiseptic precautions prescribed by Rules E. 3 and 7; neglecting to cleanse the child's eyelids as prescribed by Rule E. 15; being unable to take and record the pulse and temperature of patients, as required by Rule E. 13; not keeping the register of cases as required by Rule E. 23; and the midwife refusing to give to the inspector of midwives reasonable facility for the investigation of her mode of practice, as prescribed by Rule E. 24. The midwife not keeping her appliances in a cleanly condition, as required by Rule E. 1; not possessing the appliances and antiseptics required by Rule E. 2; and, in spite of repeated warnings, failing to comply with the rules of the Central Midwives Board. Neglect to disinfect the hands and forearms, as prescribed by Rule E. 3; neglect to wash and swab the patient's external parts prior to the confinement, as required by Rule E. 7 (a); washing the patient with dirty water during the lying-in period, and neglecting the antiseptic precautions required by Rule E. 7. Medical aid having been sought for a patient, the midwife neglected to send any notification thereof to the local supervising authority, as required by Rule E. 21 (1) (a); being under the influence of drink on more than one occasion when attending a patient, and not being scrupulously clean, as required by Rule E. 1.

THE LANCET.

LONDON: SATURDAY, APRIL 3, 1915.

Health and Occupation.

AT a recent meeting of the Eugenics Education Society Sir ARTHUR CLAY read a paper on Eugenics and the Poor-law, in the course of which he touched on some problems of peculiar interest at the present moment. Having pointed out that the great war in which this country is now engaged is a severe test of the national character, he showed that it is therefore in some measure a test also of the value and efficiency of the various social agencies which directly or indirectly affect the vigour and the vital energies of the population. Of these agencies the Poor-law is one of the most influential, and we may accordingly expect that the reaction of pauperism to the strain of the war will be found to be one of the most instructive and illuminating sociological phenomena arising out of the present crisis.

It will not, of course, be possible for some considerable time to determine the nature and extent of this reaction, but we can already see various indications which warrant us in anticipating that the experience of war will strongly support the view that part, at all events, and probably a large part of the destitution dealt with under the Poor-law is of an artificial and unnecessary character. This, of course, is no new discovery; it has always been recognised that the administration of public relief can be so conducted as to modify very considerably the amount of pauperism, that, as it has been put epigrammatically, "a nation can have as many paupers as it chooses to pay for." But in the present instance we are enabled to see rather more deeply into the biological conditions which allow of this response to pauperising influences, or, as it may be expressed in less special terms, to the influences making for the physical and moral enfeeblement of the population. And we then find, as has been found in respect of other social phenomena under the test of the national struggle for existence, that one of the important lessons to be learned from this war is that under our present social system there is a great deal of preventable waste, that the community does not get the best value out of the individuals composing it, because of the very imperfect adjustment of opportunity to aptitude. As an illustration of this point reference may be made to the effect which the war appears to have had on the general health of the non-combatant population in this country. It was pointed out, for instance, at a recent meeting of the Governors of the Royal Sussex County Hospital at Brighton, that since the commencement of the war the health of the civil population of that town, judged by the demands for hospital treatment, had improved so much that it was possible to make liberal provision for the reception of wounded soldiers without putting any strain on the resources of the institution. And similar observations have been made in other parts of the country, both in regard to general hospitals and in regard to asylums for the insane; though in the latter case the decrease seems to be confined to males, the number of female admissions even showing a slight rise. No one, of course, would think of suggesting that this curious change is due to any directly beneficial influence of the war-like spirit, or that the ultimate effect of a long and fiercely contested struggle under the conditions of modern warfare is likely to be anything but detrimental to the physical and still more to the mental health of the belligerent nations. But it is instructive as showing—for that seems to be by far the most probable explanation of the fact—that the economic readjustments necessitated by the outbreak of hostilities have recalled to activity, and therefore to healthier existence, a considerable number of individuals who under ordinary circumstances would have been nursing their minor ailments. The older and feebler men who were taken on to fill the places of the young and robust recruited for active service have improved in health when once more in regular work and well fed, and they have benefited also, no doubt, by the stimulating sense of being again useful members of the community, especially at a crisis that has greatly exalted the intensity of the social consciousness. Many of those who have been recalled to active employment were probably men whose main disability was the largely conventional one of years. They laid aside their vocations merely on account of having reached a certain age, and, having no particular interest or pursuit to which to turn, inclined to despondency and premature dotage with their concomitant ailments. COWPER sums it up very neatly when he says:

> Absence of occupation is not rest,
> A mind quite vacant is a mind distressed.

To impose idleness upon men merely because they have attained a certain age, or in conformity with a fixed rule in the particular sphere of labour in which they may be engaged, is injurious to the individuals so treated, and is wasteful from the point of view of society. The wrench of enforced leisure when in the prime of life causes premature decay and wretchedness, bringing on permanent ill-health, while a continuously occupied mind favours a ripe old age. In occupations that are not subject to these artificial rules, and most conspicuously in the higher walks of professional life and in the life of the creative artist or the scientific investigator, there is no such abrupt and compulsory cessation of activity, and therefore, too, there is as a rule no phase of premature decadence of mental and bodily powers, no long drawn-out period of ailing inutility.

If, then, we are correct in concluding that our present social and industrial system, by reason of the under-occupation which it enforces on the older and less robust members of society, is an important factor in producing the graver impairment of physical and mental vitality which is responsible for much of the pauperism and ill-health in the community—if that conclusion is justified, we may, perhaps, hope that in the period of reconstruction which must follow the war some effort will be made to devise a less wasteful method of utilising this human material. As matters stand, any decrease in a workman's industrial efficiency, due to advancing years or physical infirmity, tends ordinarily to withdraw him altogether from useful activity in his regular employment, with the result that the value of his acquired skill and technical experience is entirely lost to society, while the man himself suffers in mind and body through being forced to turn to unfamiliar, worse paid, and less interesting forms of labour. Such a system is obviously bad for the community and bad for the individual.

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Treatment of Wounds in War.

IN Sir WATSON CHEYNE'S recent Hunterian Oration[1] he gave a preliminary account of investigations which were being carried on by a committee appointed by the Medical Department of the Navy to investigate the question of the immediate treatment of wounds in war. At that time a variety of antiseptics were being examined, among others salicylic acid, but the results obtained with that substance were not sufficiently definite to warrant any special reference to it in the oration. A more detailed account of the investigation will, however, be published immediately in the April number of the *Journal of the Royal Naval Medical Service*, from which it appears that salicylic acid is likely to prove a valuable agent in the treatment of these wounds. Experiments on guinea-pigs with highly infected earth containing large quantities of tetanus bacilli and also of the bacillus aerogenes capsulatus have yielded, shortly, the following results. All control animals died in 30 to 36 hours as the result of infection with the latter bacillus, but those which lived longer as the result of various methods of treatment developed tetanic symptoms. Where the earth was mixed before inoculation with a powder of equal parts of salicylic acid and boric acid (called for shortness bor-sal) no illness resulted. The majority of the animals, in which 5 to 15 minutes after the infected earth was rubbed into the wound the wound was filled up with bor-sal powder, recovered; but where the bor-sal was made into a paste with gum tragacanth the results were not good, possibly, for one reason, because the amount of bor-sal introduced was smaller. Where, after infection with the earth, the wound was in the first place filled up with bor-sal powder and half an hour later with cresol paste (20 per cent.), all the animals recovered and the wounds healed without suppuration. Where bor-sal powder was applied first and antitetanic serum was injected afterwards, all but one of the animals recovered. The committee recommend provisionally that the wounds should be thickly powdered with bor-sal powder, and that the 20 per cent. cresol paste should then be introduced into all the recesses of the wound as soon as possible after the infliction of the injury, and in cases where the wound is soiled with earth antitetanic serum should be given. Steps are being taken to distribute dredgers containing one ounce of bor-sal powder, and tubes with long nozzles containing half an ounce of 20 per cent. cresol paste, to all the ships in the navy, and in case of landing parties each man will be provided with these as well as with the first-aid dressings. This preliminary treatment can be carried out in a very short time and, except in abdominal and thoracic injuries, by anyone who has been instructed, and it is hoped that it may prevent serious infection during the interval which elapses before the wound can be more thoroughly disinfected. If a large number of wounded are received at one time, the orderlies could renew the powder and paste and bandage while the surgeons are attending to the most urgent cases. The more careful disinfection will consist in cleansing the wounds, removing foreign bodies such as pieces of clothing or shell, which may be easily accessible, washing out the wounds with 1–20 carbolic lotion thoroughly, drying them, and then powdering them again with bor-sal, putting in fresh cresol paste; in the case of large wounds a few interrupted stitches will prevent the antiseptic escaping too quickly. A wound so dressed may not require further dressing for a considerable time. These recommendations are, of course, only provisional, and may be varied as the result of experience or of the investigation of other antiseptics, but in the meantime the above suggestions seem worthy of a thorough trial. Those who are interested in the matter will find full details in the forthcoming number of our Service contemporary.

DONATIONS AND BEQUESTS.—The late Mr. Alexander Elder, of the Elder Dempster Steamship Line, left £100,000 upon trust to found, equip, or endow a hospital for the poor of Govan, at or near the Elder Park, Govan, to be known as the "David Elder Infirmary" (in memory of his father); £50,000 to the Western Infirmary, Glasgow, for a new wing, to be called the "Alexander Elder Wing"; £3000 to the Southport Infirmary; £2000 each to the Southport Convalescent Hospital and Sea Bathing Infirmary and the Royal Southern Hospital, Liverpool; £1000 each to Dr. Barnardo's Homes and the Liverpool Maternity Hospital and Ladies' Charity. The residue of his estate will be divided, at the discretion of his executors, among certain charitable institutions, including hospitals, in Liverpool and Glasgow.

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[1] THE LANCET, Feb. 27th, 1915, p. 421.

Annotations.

"Ne quid nimis."

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON: ELECTION OF PRESIDENT.

AN extraordinary Comitia of the Royal College of Physicians of London was held on March 29th, Sir Thomas Barlow presiding and delivering the usual Presidential Address, in the course of which he referred to the honours that had been conferred on Fellows, Members, and Licentiates during the year. He especially mentioned Captain A. M. Leake, R.A.M.C., who for the second time had been awarded the V.C. He also reviewed the list of the lecturers of the year, the gifts which had been made to the College, and the medals and scholarships which had been awarded. After consideration of the principal matters which had been discussed at the College, the President read obituary notices of the Fellows who had died during the year—namely, Samuel Herbert Habershon, Edward Cox Seaton, Isaac Burney Yeo, Eustace Smith, John Abercrombie, and Philip Henry Pye-Smith. In conclusion, the President thanked the censors, the officers of the College, and the Fellows for the support they had given him during the time he had occupied the presidential chair. Dr. P. W. Latham proposed a vote of thanks to the President for his address, with a request that it might be printed; he added that the Fellows wished to express their highest appreciation of Sir Thomas Barlow's services to the College whilst President. Sir Thomas Barlow thanked the College and vacated the chair. The ballot then took place for the election for President, and Dr. Frederick Taylor was elected. The Senior Censor, Dr. Percy Kidd, delivered the charge and handed to Dr. Taylor the insignia of office. The new President then gave his faith to the College and expressed his thanks for the honour conferred on him.

THE AIR AS A SOURCE OF EXPLOSIVES.

THE demand recently credited to Sir John French, "Munition, more munition, always more munition," may well have been "Nitrogen, more nitrogen, always more nitrogen," for without nitrogen the most distinctive form of modern munition—namely, the high explosive—cannot be made. There is a vast importance attaching to this element just now; it possesses, as a matter of fact, in time of peace an equal importance, inasmuch as it is an essential constituent of our foods, but until the manufacture of explosives became a matter of national urgency the public was prepared to explain the statement of chemical text-books, which are wont to describe nitrogen as an inert element, as meaning an element of no activity. Ordinarily speaking, nitrogen is comparatively an inert gas; great forces only can find for it affinities; it will not combine under simple circumstances, nor does it exhibit simple characteristics in the same way as the other gases do, as, for example, oxygen, hydrogen, or chlorine. Of course, to some extent it is this very inertness which renders nitrogen a powerful explosive agent. So to speak, it yearns to be free, and a small temptation releases it from the combination in which it is an unwilling partner. It is harmless enough in the air, and we breathe it with impunity every minute of our lives. Yet the future will most likely show that the great foundation of explosives will be the air itself. The world's supply of nitrogen in the form of nitrate has been hitherto derived from the beds of this salt occurring in Chili, and something like 400,000 tons of nitrogen in the form of nitrate are annually exported from that country. But the same quantity occurs in the air over every 13 acres of ground, and the summarising calculation has been made that the whole atmosphere of the world contains 4000 billion tons of nitrogen. In explosives nitrogen may be said to play two parts: it carries in essential oxygen, and then is itself released on combustion in a highly expanded gaseous state. The nitrification of hydrocarbons of the benzene type (toluol) and of phenols supplies the modern explosive. If the issue of war is to depend upon explosives that nation will win who succeeds in utilising the greatest supply of nitrogen, and this consideration has led to some interesting speculations. Should the nitrogen of the air become economically available for the purpose all nations will be equally well off as regards the supply of raw material. The important question remains, however, as to whether all nations will be equally well situated concerning the means of converting this abundant supply into nitric agents. It is only economic power that can do this for practical purposes, and, so far, water power is the cheapest producer of nitric acid from the air. The process is simple, but requiring great energy. If the temperature of the air is raised to an intense degree a point is reached when nitrogen begins to burn and nitrous acid and nitric acid are formed. The necessary temperature is reached by the electric arc flame. The arc flame is most economically produced by water power. Thousands of tons of nitric acid are produced in this way in Norway and Sweden. If bombs and shells, therefore, are to be regarded as the decisive factor in a war, a limited view which we are certain that Sir John French does not take, the nation will win the struggle which can produce the greatest output of these weapons. Assuming that no cheaper method of production than by water power converted into electric energy is available, and assuming again that equally effective explosives of a non-nitric type are not invented, this conclusion affords a suggestive perspective when the countries which possess great natural water powers and great gasworks are remembered. Nitric acid requires partners, and the most effective are produced at the gasworks. As far as we know, carbolic acid and toluene are produced nowhere else in practical quantities, so that the gas industry assumes an importance equal to the great water-power stations when the production of explosives is considered.

THE MEDICAL INSURANCE AGENCY.

AT a meeting of the committee of the Medical Insurance Agency, under the chairmanship of Dr. G. E. Haslip, which was held at the offices of the British Medical Association on Wednesday, March 24th, a report of the work of the agency during the year 1914 and the audited balance-sheet were submitted to the committee by the chairman. Both the balance-sheet and the report were approved by the committee, and with good reason, as the working of the year was seen to be highly successful. The total sum of money received during the year from premiums and other sources amounted to over £10,000, the premium income showing the valuable connexion which has been established in a comparatively short time. The actual commissions earned enabled something over £300 to be ear-marked for distribution. It may be remembered that the committee distributed £315 in November last in medical benevolence, and if its efforts are supported there is no doubt that its annual contributions will become a powerful factor in the support of our professional charities. The chairman advised in the report that it would be prudent not to distribute more than £200 of the surplus money, having regard to the uncertainties created by the war, and it was resolved that the following grants should be made, totalling £200: The Royal Medical Benevolent Fund, £75; the Royal Medical Benevolent Fund Guild, £50; Epsom College Benevolent Fund, £50; and the Royal Army Medical Corps Benevolent Fund, £25. The fund has now distributed during its short life £1275 to medical charities, while returning to insurers by way of rebates £3700. The committee has every reason to be proud of what it has accomplished, and to look forward to a greater sphere of work and utility. The energy and tact of Dr. Haslip, who has given much time and trouble to the work, deserves full recognition.

LEPROSY IN HAWAII.

SINCE 1909 a new law has been in force in Hawaii making the apprehension and detention of lepers compulsory. Every person who has reason to believe that he or any other person not under control by the state is a leper must forthwith notify the fact to the Board of Health; and anyone so reported must be examined medically, after which, if the diagnosis be established, he must be duly isolated. Notwithstanding this law difficulty is still encountered in securing the discovery of every case of the disease. In a statistical study of leprosy in Hawaii recently published in the *United States Public Health Bulletin*, No. 66, Dr. George W. McCoy gives some interesting particulars regarding the malady in this American dependency. The total number of lepers officially apprehended since 1901 has amounted to 1060, or an annual average of about 82. Of this total, 52 were Portuguese, 14 belonged to other European nationality, 13 were Americans, 29 Japanese, and 61 Chinese. About half of those apprehended were between the ages of 11 and 25 years. It is a curious fact that the incidence of the disease is almost twice as high among males as among females, the respective figures being 673 and 387. Inquiry into the previous history of the cases showed that association with leprous persons was admitted in nearly 37 per cent., and in this number the presence of the malady in a parent, brother, or sister constituted over half of the admitted association. Dr. McCoy believes that the statement frequently made—namely, that prolonged and intimate contact with leprosy is needed to bring about infection—is certainly not borne out by the facts as witnessed in Hawaii. Cases are frequently met with in which there is absolutely no history of any association with lepers. Difficulties often arise with regard to the early diagnosis of the disease before apprehension of the patient. In 188 cases the leprosy was alleged to have existed less than a year, in 131 for a whole year, in 99 for two years, in 92 for three years, in 48 for four years, and in 42 for five years. In 86 it had existed from six to 10 years, and in 49 for more than 10 years. In 20 instances it was claimed that the disease had existed the whole of the lifetime. The statement sometimes made that the malady has persisted from infancy is generally put forward for the purpose of misleading the investigator. It is encouraging to learn that the percentage in recent years of lepers apprehended early is larger than formerly. As regards the finding of the bacillus lepræ at the official medical examination, this was positive in 929 cases; in 60 it was negative, and in 71 instances no information on the point was given. It appears that nodular cases now form a larger proportion of the whole than in the past; 327 patients suffered from the anæsthetic type of the malady, 384 from the nodular, and 275 from the mixed. In 74 instances the type of leprosy was not recorded. The control of the disease places a heavy financial burden on Hawaii, and at present there is little likelihood of its becoming lighter in the future. We learn that the legislature appropriated the sum of $412,130 for the care of lepers, including permanent improvements, for the two-year period beginning July 1st, 1913.

ANTISTREPTOCOCCIC SERUM IN ACUTE BRONCHITIS.

IN another column we publish a note by Mr. J. G. Hayes on the use of antistreptococcic serum in acute bronchitis. In the three cases which he records relief followed the administration of the serum. It would be unwise to attempt to draw any conclusions from such a small number of cases; a much larger field for research would be necessary. Nevertheless, the publication of only a few cases treated by any special method may have some value as indicating the results arrived at by a particular observer, for such results may be corroborated or contradicted by other workers. Thus accumulative evidence may be obtained, which eventually may lead to a decision in respect of a therapeutic measure. It has frequently been stated that to base an opinion of any form of treatment on the observation of only a few cases can only be fallacious, and probably many observers would challenge Mr. Hayes's conclusions. The bacteriology of acute bronchitis appears to vary, and that the toxæmia of acute bronchitis is in most cases due to a streptococcus is by no means certain; the pneumococcus is also found, and in such cases antistreptococcic serum would not be indicated. If Mr. Hayes's lead is followed, it would be well to place the treatment on a more scientific basis by a bacteriological examination of the sputum before the treatment is commenced, so as to isolate, if possible, the pathogenic organism.

GERMAN PROSTITUTES IN BELGIUM.

AMONG the many questionable benefits conferred by German Kultur on Belgium appears to be a large number of syphilitic German prostitutes. So wrote the Antwerp correspondent of the Dutch journal *Het Telegraaf* a few weeks ago, commenting on the statement of the German Catholic paper, the *Kölnische Volkszeitung*, that about 180,000 cases of venereal disease had occurred in the German armies in Belgium and Northern France. The German paper made the assumption that the sources of infection were to be found among the inhabitants of the invaded countries.

The Antwerp correspondent, however, throws quite another light upon the actual state of affairs. In Belgium, as he points out, prostitution is most carefully and systematically regulated and controlled, submitted to registration and inspection; cases of venereal disease are at once submitted to hospital treatment until they are no longer infectious. Prostitutes of alien nationality are expelled and made to return to their own countries; in the case of Antwerp, over 80 per cent. of the prostitutes thus expelled are German women. If the German military authorities wish to put a stop to the prevalence of venereal disease among the German soldiers they should expel from Belgium the German sources of infection, bringing into force once more the Belgian enactments for the regulation of prostitution. The matter is not without interest for the Allies at the present moment. It is to be expected that they will be advancing along the Western battle-front before many weeks are past, and there seems to be good reason for fear lest the Allied troops and the returning inhabitants should be unduly exposed to infection with venereal disease when the country at present held by the Germans is cleared of its invaders and returns to the possession of its rightful owners.

TONIC INNERVATION.

Dr. S. A. K. Wilson describes in *Brain* (vol. xxxvii., 1914) under this title a curious, and apparently not very common, clinical condition which he has observed in three cases. Briefly, the symptom consists in inability to relax the muscles which have performed a "willed" or voluntary action, whilst direction of the subject's attention away from the act immediately "unlocks," as it were, the sustained effort. In the cases instanced the phenomenon was strictly unilateral, and involved mainly the arm muscles. There was, in all, involvement of the cortico-spinal path; in two cases the lesion was a tumour situated in, and successfully removed from, the right hemisphere. There were slight spasticity and active reflexes in the affected limbs. No sensory changes were noticeable. Tonic innervation, Dr. Wilson suggests, must be distinguished from certain examples of sustained or clonic performance of an act other than the one demanded of the patient, as also from "ideational inertia" of purely psychic origin. It may or may not be associated with apraxia (or simple inability to perform movements which automatically could be executed without difficulty), again a condition of psychic origin. The symptom is regarded, in short, as of psychomotor origin—dependent on psychic changes, especially volition, in that this element, whilst not *per se* the cause, at any rate influences the act in an obvious manner; dependent upon motor changes in that the symptom is only observed when the specific functions of the cortico-spinal tract are slightly impaired. It is noted that when the pyramidal lesion is more evident, the symptom goes; the pyramidal involvement, it appears, must not be too great. That tonic innervation is not attributable to muscle changes is suggested by the strong evidence that its contraction is of the type recognisable by galvanometric observations as characteristic of centrally innervated activity, evidence gained especially in myotonia cases which present certain clinical similarities to the condition under consideration. Where is the lesion, and what is its character? It is said to be extremely likely that the phenomenon of tonic innervation is due to a disturbance of reciprocal innervation in "willed" movements; with such disturbance the relaxation of the antagonistic muscles to those performing an act is interfered with. But this reciprocal innervation may be carried out in spine or in cortex. In the cases here recorded it is suggested that there was impairment of function of the cortico-spinal neurones from a lesion at their cortical end ...... "either the activity of the affected motor centres is directly interfered with or, more likely, the stimuli reaching them by short transcortical paths from a hypothetical psychomotor centre placed in the area in front of the precentral gyrus are interfered with." Finally, it is probable, since few cortical lesions demonstrate the sign, that a certain stage in the functional interference must be maintained.

ANNUAL CONGRESS OF THE OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

THE annual congress of the Ophthalmological Society of the United Kingdom will be held on Thursday to Saturday, April 22nd to 24th. On Thursday morning papers will be read at the Royal Society of Medicine, 1, Wimpole-street, W.; at the afternoon sitting a discussion on Ophthalmic Injuries in Warfare will be opened by Mr. W. H. H. Jessop and Colonel W. T. Lister; at 5 P.M. the annual business meeting will be held. Friday morning will be devoted to a discussion on Detachment of the Retina, to be opened by Dr. A. Maitland Ramsay, Mr. Leslie Paton, and Mr. M. S. Mayou; in the afternoon there will be a clinical meeting at the Royal London Ophthalmic Hospital, City-road, E.C. On Saturday morning papers will be read. Members desirous of reading papers or showing cases should communicate at once with the honorary secretary, Mr. G. Coats, 50, Queen Anne-street, W. It is intended to hold an exhibition of drawings, specimens, and so on, during the meetings. Exhibits should be addressed to Mr. M. S. Mayou, 30, Cavendish-square, W.

A RECEPTION will be held by the West London Medico-Chirurgical Society at the West London Hospital on Friday, April 23rd, at 8.30 P.M., when the programme will include war exhibits, short addresses on war subjects, illustrated by lantern slides and pictures, and music. The charge for each ticket, whether for a member, a lady, or other guest, is 5*s.*, and it is hoped that members of the society will subscribe even if they are unable to be present for the whole of the proceeds, after the deduction of expenses, will be transmitted as a donation from the society to the Belgian Doctors' and Pharmacists' Relief Fund. Early application for tickets, enclosing a remittance, should be made to either of the honorary secretaries, Mr. Oswald Addison, 125, Harley-street, W., or Dr. Reginald Morton, 66, Harley-street, W.

AMONG the Fellows of King's College, London, appointed on March 24th, occur the names of Sir Arthur William May, K.C.B., Director-General of the Naval Medical Service, and Sir Arthur Thomas Sloggett, K.C.B., C.M.G., Director-General of the Army Medical Service.

Colonel Sir W. B. Leishman, R.A.M.C., was personally invested by the King on March 29th at Buckingham Palace with the Insignia of a Companion of the Bath (Military Division).

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

THE FUND AND RELIEF MEASURES IN BELGIUM.

AT the last meeting of the Executive Committee of the Fund full information was forthcoming concerning the urgent needs of the Belgian doctors and pharmacists remaining in their own country, and at the same time a plan was considered and adopted for attempting through the medium of the Fund to alleviate this distress. In Belgium the committee formed to consider the position of the doctors and pharmacists has now been largely reinforced, and is known as the Aide et Protection aux Médecins et Pharmaciens sinistrés. The President is Dr. Péchère and the secretary M. Delacre. The body is a representative one, and has organised machinery for ascertaining where the need among those whom it would help is greatest and for providing systematic relief. It has worked in connexion with the National Relief Fund and has received from that Fund a subsidy, which is now exhausted. When the Belgian Committee was started Professor Jacobs, professor of obstetrics in the University of Brussels, came to England last November as its delegate, and it is owing to the representations which he then made that the movement in this country, and later in our dependencies and in America, was started. The Executive Committee of the Belgian Doctors' and Pharmacists' Relief Fund has always said, in appealing for subscriptions, that a part of the money which it might collect should, as early as the conditions in Belgium permitted, be distributed on the advice of the committee in Belgium. At first, however, no method of communication between ourselves and a country mainly occupied by the enemy's army was possible. Through the good offices of Mr. Herbert Hoover, the Chairman of the National Relief Fund, we were able to distribute some medical material, which was conveyed to its destination by the National Fund, but at that point we were compelled to remain until some effective machinery on the other side rendered more substantial and fruitful coöperation possible. The Aide et Protection aux Médecins et Pharmaciens sinistrés has now prepared the ground, and done so with great energy despite the immense difficulties under which it has had to work. Forms have been issued to all the doctors and pharmacists in Belgium on which they are asked to state frankly their position, that of their families, the loss that they have sustained, and the amount of money necessary to enable them, at any rate, to tide over their existing terrible circumstances. In estimating the validity of the claims the Belgian Committee has acted in consultation with the local medical societies throughout Belgium and with the Government inspectors of pharmacy, who also inspect the dispensaries of medical men. Those who have been relieved include the widows of doctors and pharmacists who have fallen fighting, or who have been the victims of German ferocity. It is noteworthy that such money as has been hitherto given has been given entirely to the country at large, although distributed from Brussels; in Brussels the better circumstanced doctors and pharmacists have supported the Fund for the relief of their poorer colleagues. Many of the forms relating to the pharmacists have reached this country and have been submitted to the Executive Committee of the Belgian Doctors' and Pharmacists' Relief Fund, and it is hoped that we shall later receive the forms relating to the medical men; but enough evidence has been submitted to the Executive Committee to enable it to realise that immediate help in money ought to be sent as this now seems feasible. With the coöperation of the banks concerned a sum of money is being sent immediately to Belgium to be distributed by the Aide et Protection aux Médecins et Pharmaciens sinistrés in accordance with the particularised needs which are now in the hands of that body; and it is proposed to send further sums from time to time as detailed reports from the Belgian Committee and other information at the disposal of the Executive Committee show that the money is being usefully expended. Subscribers to the Fund will see that the Executive Committee has now embarked upon a definite scheme of large expenditure, and, generous as the responses have been to the appeal by British doctors and pharmacists, it will be necessary that further effort should be made, and even made with greater vigour than heretofore. The Fund can do much with the money which it has in hand, but it is not possible to estimate how long the strain upon it may have to be maintained, and far greater resources than it possesses will be urgently required.

THE GIFT OF INSTRUMENTS TO BELGIAN MILITARY HOSPITALS.

It will be remembered that through the medium of Mr. S. Osborn a selection of the instruments, which have been received by Mr. Meredith Townsend, the Master of the Apothecaries' Society of London, in response to the appeal of the Fund, was placed at the disposal of certain Belgian military hospitals. Sir Rickman Godlee, the chairman of the Executive Committee, has received from Captain G. Deffontaine, writing for the Belgian Military Command in Calais from the Hôpital de Passage, a cordial letter of thanks for the instruments, while Mr. Osborn has reported to Mr. Townsend that the instruments arrived at a particularly opportune moment, when a fire had burnt out the operating theatre of the Hôpital Jeanne d'Arc.

THE APPEAL FOR SURGICAL INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge with thanks the receipt of surgical instruments kindly contributed by Dr. J. Jones, of Leigh, Lancashire.

THE WEEK'S SUBSCRIPTIONS.

Owing to Easter THE LANCET went to press early, and the detailed list of subscriptions for the incomplete week will be published in our next issue.

THE QUEEN AND THE LONDON SCHOOL MEDICINE FOR WOMEN.—The Queen, accompanied Princess Alexander of Teck, paid an informal visit to the London School of Medicine for Women, Hunter-street, W.C., on March 24th, when Her Majesty was received by Miss L. B. Aldrich-Blake, dean of the school, Dr. Mary Thorne, Mrs. Scharlieb, and Miss L. M. Brooks, secretary and warden. Her Majesty showed great interest in the work of the students, in the site for the new extension of the school, and in the plans for the new women's military hospital which will be opened in April in Endell-street.

THE WAR AND MEDICAL PRACTICE AT SOUTHAMPTON.

(From our Special Commissioner.)

Southampton, March 22nd.

When it has been necessary to organise the medical profession for some common purpose the practitioners of Southampton have always shown themselves active. In the old days of the Battle of the Clubs they were well to the front. Indeed, so energetically was this battle fought that the medical aid societies and the various financial schemes based on the exploitation of medical men obtained no hold in the town. Accustomed to act in concert the practitioners of Southampton were prompt to meet to discuss the professional situation created by the war directly it was declared. On the day itself, August 4th, they held a meeting, and by August 5th a circular had been drawn up, printed, and sent round to every medical man in the district. Their action was impulsive, patriotic, and generous; whether it was altogether wise is now being discussed. The one dominating thought at the outbreak of war was that nothing should stand in the way of the practitioner whose services might be wanted at the front. Therefore all the practitioners were informed that during their absence their colleagues would look after their practices. It would be a point of honour not to attempt to capture the absentee's patients. On his return, not only would the patients be restored to him, but also he would receive all the fees which they had paid during his absence. Thus the profession at Southampton pledged itself to work gratuitously for those of its members who were mobilised. What this might entail was obviously not foreseen at the time. The fact is that the medical profession, like most other sections of the community, could not realise what war on a continental scale would mean.

The Private Practices of Surgeons with the Colours.

A small army or expeditionary force is one thing, an armed nation is a very different matter. If we had raised an extra force of half a million only above our normal or regular army the generous proposal of the Southampton practitioners might still have been practicable. But the figures now reached by our army make the economic results of the Southampton project well-nigh impossible. Before anything like the number of men now with the colours had been enrolled the effect on panel practice was marked. This, as in the case of all contract work, depends for its financial feasibility on the percentage of sound lives among the lists of insured persons, Now it is just these sound lives, the very best of them, who are enlisting; and as a panel doctor pathetically put it to me, "they leave the crocks behind." A large proportion of the new armies in course of formation consists of men who were insured, and being healthy and in the prime of life they gave their panel doctors very little trouble. To-day, it seems, panel practice means nearly the same amount of work as before the war, though there are fewer insured persons to pay for it. If, also, a panel practitioner finds he has to attend for nothing the paying patients of a fellow practitioner who has gone off to the war, he feels sore. So long as only one or two practitioners thus left their practices to the care of their colleagues, and this work was divided between several, it did not matter very much. But we have passed that stage. As the war continues and the demand for more troops ever increases the difficulty becomes apparent, and at Southamptom some medical men are already thinking that perhaps the arrangement was too hastily made. Certainly a practitioner should not lose his position, acquired perhaps after a long struggle, because in his sense of duty he has gone to the war. But if this practitioner is paid for his services in the army, and as well paid as if he had remained at home attending to his own practice, why should his colleagues do his work for nothing? Why should a practitioner be paid twice over, once for the work he has done and once again for the work he has not done? That is the question which is being formulated in Southampton; but I feel that there cannot be many practitioners who are in exactly the position indicated, for if their present army pay is better than their late professional pay they cannot have had any large private practices to be nursed for them and returned to them intact, plus a large quantity of fees.

But the arrangement made at Southampton on the very first day the war was declared calls for some revision now that the war promises to be of such extent and duration. In is felt to be unfair upon medical men who remain behind that they should give their services gratuitously and to at unlimited extent for an unlimited time. The income derived from this practice might at least be shared with the absent practitioner, a proceeding which, I believe, is being followed in some districts.

If at the end of the war and on his return home from the army the practitioner finds that his private practice has not fallen to pieces, but has been carefully and honourably preserved for him by his fellow practitioners, he will have much to be thankful for. If, over and above this, he also receives not the whole but a part of what he would have earned had he remained at home, he will, at any rate, feel that his colleagues have not been unmindful of his risks.

The Question of Dependents.

It must be admitted that practitioners at Southampton may be able to afford to be generous in a way that would be impossible in some districts, for they have not lost much in consequence of the war, but this does not mean to say that the war has brought no troubles in its train. To begin with, the two principal lines have left Southampton; the ships of the Royal Mail and the Castle Lines now sail from Liverpool and London. It is true that the families of the officers and crews have not all been able to leave Southampton to follow the ships. A house, held perhaps on a long lease, to say nothing of all the furniture, cannot be easily given up. Still, a considerable number of families connected with these great lines of passenger ships have left Southampton, and the practitioners miss these good paying patients. Then the difficulty in regard to the dependents of men who have enlisted is the same here as in many other places. Whatever may have been done or said elsewhere, all the practitioners I saw at Southampton declared they had only undertaken to attend gratuitously the *necessitous* dependents. But it is no easy matter to ascertain who are necessitous, and the action of the Soldiers' and Sailors' Society has added to the confusion. This society gives prescription books to members of soldiers' or sailors' families. The patient's name is put on the top of the book, and it is supposed to serve as an introduction to a medical practitioner. At Southampton some prescription books were given to people even before they were ill. Kindly ladies visiting the families of soldiers, and hearing someone say they were not quite well, would offer prescription books, and perhaps recommend their own private doctor. They did not at all realise that they were playing the part of Lady Bountiful on the cheap. Those who thus received prescription books often thought they might as well go and get a bottle of medicine, as it would not cost anyone anything except the doctor, while it was the lady who gave the prescription book who became the object of the recipient's gratitude.

The Public Medical Service.

As the dependents on soldiers are, in many cases, better off than they have ever been before, the doctors now make inquiries before giving gratuitous advice; and when they find that the patients are not in a necessitous position they are advised to join the Southampton Public Medical Service. This is the modern expression of the old Southampton Provident Medical Association which was organised by the Southampton Medical Union to fight the Friendly Societies and the speculative medical aid insurance companies. Joining this body, the former club doctors established a wage-limit and raised the subscription from 1*d.* to 1½*d.* per week. As a consequence, they lost a third of their members, but, receiving a third more pay, and were none the poorer, though they had much less work to do. Now there have been much greater alterations. The wage-limit has been altered to £3 a week, thus keeping in line with the Insurance Act, while the subscription for adults is 2½*d.* a week and for children 1½*d.* If there are more than four children the others are attended free of any charge. The members of this service can select any practitioner in the town whether he is on the panel or not, for the entire profession accepts these terms of contract practice. These are the conditions on which a great number of dependents on soldiers or sailors are now being treated. The war has thus caused no decrease in membership. During the course of last year no less than 1100 new subscribers were enrolled, and the membership of the Southampton Public Medical Service now amounts to 8819.

War Service Rendered by Civilian Doctors.

When war was declared a large number of the officers of the Royal Army Medical Corps went with the Expeditionary Force to the continent. Thereupon the practitioners at Southampton were invited to volunteer for military service and many responded. One practitioner at Shirley went, but he had four or five colleagues living around his house to look after his practice during his absence. Another sold his practice altogether, and a third has two partners to look after his interests while he is abroad. Thus it will be seen that the work to be done near the fighting-line has not disturbed, to any serious extent, medical practice at Southampton. Of greater importance is the work that has to be done at home. Netley Hospital was denuded just as the wounded were beginning to come over from the continent. Consequently about ten Southampton practitioners and consultants went on duty at Netley for a short time. As more surgeons were enrolled, notably from London hospitals, to join the army some of them were sent down to Netley and the civilian doctors returned to their ordinary practice. But the army surgeons at Netley are not likely to remain there long. They will follow the new armies to the front, and the civilian doctors of Southampton may once again be called upon to attend the wounded at Netley. Then there are many more wounded expected, and additional hospitals are being prepared to receive them. New huts are being put up at Netley, and the large buildings recently constructed for the extension of University College at Highfield have been taken over and converted into a hospital. The new blocks of the Shirley Warren workhouse infirmary have been surrendered by the guardians for the care of the Belgian wounded, so there will be much work to be done for the war without leaving Southampton. It should also be borne in mind that extraordinary precautions must be taken to prevent Southampton becoming the port of entry of infections, especially of exotic diseases. There is plague in India and Egypt, while cholera has already spread to the Austrian army. Therefore it is satisfactory to know that a large military isolation hospital is in course of construction at Southampton.

The stress caused by the war has so far fallen lightly on the members of the profession practising at Southampton. But the time is probably very close at hand when much more work and greater responsibility will be thrown upon them, while their numbers may be reduced by further departures for the front.

UNIVERSITY COLLEGE HOSPITAL.—The annual general meeting of the corporation of University College Hospital, Gower-street, W.C., was held on March 25th, Captain the Hon. E. S. Dawson being in the chair. The chairman said that the past year had been a most eventful one all over the country in all matters connected with hospitals. In their hospital they had continued and extended their work. The number of in- and out-patients both showed small increases, yet, notwithstanding the general rise in prices and cost of living, there had been a slight decrease in the average cost of patients. To afford every possible help to naval and military medical departments not only had they reserved 100 beds for treatment of cases from the front, but all members of the staff who could be spared had, in many cases at great personal sacrifice, placed their services at the disposal of the Government. In addition many students, and no fewer than 60 members past and present of the nursing staff, had also proceeded to the front. The incorporation of the National Dental Hospital as a dental department of the hospital, the chairman continued, had been one of the notable events of the year, and this department has rendered valuable service by the treatment, free of charge, of no less than 2451 recruits for the new army. All departments of the hospital continued in a high state of efficiency, and financially, by the exercise of all possible economies, the results of the year had been slightly more favourable than they had expected. The Duke of Bedford was elected president of the corporation.

Public Health.

REPORT FOR 1913 OF THE MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER OF THE ADMINISTRATIVE COUNTY OF LONDON.[1]

Dr. W. H. Hamer's annual report for 1913 has recently been presented to the London County Council. It constitutes Vol. III. of the Council's general report, and has been issued under a separate cover for the convenience of readers. In the medical officer's report for 1912[2] announcement was made of a complete reorganisation of the Central Health Department consequent on the decision of the Council to coördinate, under Dr. Hamer's direction, the whole of the medical work respecting public health and education for which that authority is responsible. In that report, the first in his dual capacity, details were given of the administrative changes required by the Council's decision. A second year's experience under the new régime appears to justify the action taken. It further teaches that in similar cases wherever responsibility can be centred in one office more satisfactory results may be looked for than in those cases where responsibility is shared by separate departments.

The present report, like its predecessor, covers a very wide range, and for this reason we can only touch on a few of the more important topics therein discussed in detail. It bears abundant evidence of Dr. Hamer's assiduity in dealing with the many complex problems that require his personal attention. Having ourselves profited by its study, we earnestly commend this volume to the consideration of all those who are solicitous for the welfare of London's vast population. Equally evident is the despatch with which the extensive administrative changes in the health department have been accomplished by the central staff, and this at a time of extraordinary pressure on their resources.

Part I. of this report, which relates to public health generally, is dealt with in the present article. Administrative action for education purposes, as recorded in Part II., will form the subject of a future notice. In our remarks on the several matters discussed the order adopted in the original will be followed.

PART I.—(A) VITAL STATISTICS.

The loss of population by outward migration in recent years was alluded to in the annual report for 1912, and the subject is now more fully discussed. The population of London is still estimated to have exceeded 4½ millions in the middle of 1913. The composition of the population differs materially in the two areas into which the county is divided by the Thames. By the year 1891 London north of the river had been so greatly over-built that the rapidly increasing population could not be housed within the county boundary. Consequently, there has been since that date a constant overflow of the London population into the adjoining counties of Essex and Middlesex. But, in 1891, so much of the area south of the river remained undeveloped that the outward extension has not overflowed the county boundary to the same extent. The modifying effect of these variations on the age and sex constitution of the aggregate London population is explained in the text.

London Birth-rate.

In the year under notice the ratio of live births to population was the same as in 1912—namely, 24·5 per 1000—and thus, for the first time in ten years, no decline is recorded. This fact might conceivably be attributed to the effect of the National Insurance Act; but it is noteworthy that a similar pause in the fall of the birth-rate is reported in Paris, Amsterdam, and Stockholm among foreign capitals. In England and Wales as a whole the birth-rate increased from 23·8 in 1912 to 23·9 in 1913. In the metropolitan sanitary areas the usual wide differences persist, the proportions ranging from 9·2 and 14·2 respectively in the cities of London and Westminster to 31·0 in the borough of Bermondsey and 32·0 in Poplar. Of the success achieved under the Births Notification Act details are given in a table which shows marked differences in the extent to which its provisions have been locally complied with. For example, whilst in Wandsworth the registered births exceeded by more than 2000 the births notified under the Act, the latter, on the contrary, were actually the more numerous in Finsbury and in some other districts.

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[1] Published by P. S. King, Limited, London, price 2*s*. 6*d*.

[2] A notice of this report appeared in THE LANCET of April 18th, 1914, p. 1137.

Comparative Mortality.

The London death-rate in 1913 was equal to 14·2 per 1000 living, which is slightly above the rates of 1910 and 1912, but with these exceptions is lower than any previously recorded rate. For many years past the London health reports have contained diagrams in which the successive death-rates are represented in relation to the mean of the rates obtaining in a long series of years. In the present diagram the decline in mortality, which with few interruptions has been practically continuous since 1880, is represented by light shading. It is possible that to the casual reader the graphic method may appeal more forcibly than does the usual array of figures, inasmuch as it shows at a glance the measure of the life saving accomplished in recent years. As in previous reports, endeavour has been made to obtain by appeal to life-tables an approximate estimate of the effects on the London community of fluctuations in mortality, the method employed having been first introduced by Dr. John F. W. Tatham in his reports on the health of Manchester. The advantages of this method, together with the formulæ employed, are detailed in the London Health Report for 1901. With the help of the new London life-table the number of deaths occurring in 1913 is compared with the number that would have occurred had the death-rate prevailing in the preceding decennium been maintained in that year. The number of lives gained in the latter period are also shown, and the figures given express that gain in terms of "life capital," this being obtained by applying the mean future lifetime figures to the lives gained at each age-group. From the appended table we learn that in the year 1913, as compared with 1901–10 there has accrued a saving of 7847 lives, representing a gain to the London community of 387,897 years of "life capital."

Loss of Life in Infancy.

In the year under review the deaths below the age of one year were in the proportion of 105 per 1000 births, against 91 per 1000 in 1912, the deaths in both years showing an encouraging decline from the high rates prevailing in the opening quinquennium of the century. The report indicates that among metropolitan boroughs Shoreditch fared worst and Hampstead best in respect of infant mortality both in 1913 and in the preceding five years. Systematic examination continues to be made of the infant mortality tables prepared by district health officers in accordance with instructions from the Local Government Board. With the aid of returns derived from the improved tables first issued in 1905 comparison is now instituted between the mortality in 1913 and that of the seven antecedent years. With respect to the diseases responsible for infant fatality we note that pneumonia is the only definite heading under which excessive loss of life is recorded in 1913. With the object of illustrating the influence of social condition on infant well-being tables have been prepared in which the varying death-rates in groups of districts are contrasted. And here it must be explained that the standard adopted for determining the social condition of a district is the percentage of all children between the ages of 5 and 14 years scheduled by the Council for education purposes in the period 1905–07. The question of whether or not a child is to be scheduled depends upon circumstances which collectively form a measure of social condition. The county has been divided into five groups representing different grades of social condition—the most favoured group consists of boroughs in which less than 82 per cent. of the children were scheduled; the least favoured group, where the proportion exceeded 97 per cent. From tables relating to the period 1905–12 it appears that in each successive trimester of the first year of life the difference in the mortality obtaining in the several groups of districts becomes generally more pronounced. As an extreme instance, in 1913 it may be noted that if among infants aged 3–6 months the mortality in the most favoured districts is represented by 100 it will be equal to 202 in the least favoured districts.

Principal Epidemic Diseases.

The experience of London in 1913 under the Infectious Diseases Notification Act shows an increase in the number of cases of scarlet fever, diphtheria, and erysipelas, and a decrease in the number of cases of small-pox, typhoid fever, and puerperal fever.

Scarlet fever.—The notified cases of this disease exceeded by 6240 the number in the previous year, but the type of disease continues to be mild and the mortality rate is comparatively low. High incidence of attack is not confined to London, but has occurred in several other large towns. Mr. G. Millson, of Southwark, states that increased scarlet fever prevalence has generally been observed there in five-year cycles. The outbreak of 1913, however, followed on a quiescent period of seven years' duration. He finds that the average age of the patients has not increased in Southwark, and concludes that if a child escapes scarlet fever up to the age of five years he stands a fair chance of escaping it altogether. This question would repay attentive study.

Enteric fever.—The low level of enteric or typhoid fever prevalence maintained for several years has again been observed in 1913. For in that year, as also in 1909 and 1912, there was practically no autumnal increase. Reasons exist for the belief that the great majority of London attacks in these years were due to causes other than the drinking of polluted water. In this connexion the recent important researches of Dr. A. C. Houston, water examiner to the London Water Board, are discussed in considerable detail. In his report for 1913 this observer throws additional side-lights on the etiology of typhoid fever. He has lately repeated earlier attempts to isolate organisms resembling the typhoid bacillus in raw Thames water. In this attempt he has been successful in two instances only. But on both these occasions he has demonstrated by rigorous tests the presence of microbes indistinguishable from the typhoid bacillus. Inasmuch, however, as this result has accrued from the examination of not more than two or three dozen gallons of raw water, it is clear that the entire London water-supply may at times contain large numbers of such bacilli. And yet no one ventures to suggest that drinking water seriously contributes to the amount of typhoid fever in London. The principle is established that failure to demonstrate the presence of the bacillus in a particular specimen of water does not prove that the bacillus is not there. Moreover, experience teaches that, in any event, the presence of the bacillus typhosus is by no means the same thing as its potential infectivity. Dr. Houston discusses two problems: "Whether typhoid bacilli reach the consumer singly or in clumps; and whether one or a number are necessary to start the infective process"—problems which, as he says, are of "extreme interest to epidemiologists." He adds that "if a single typhoid bacillus ingested with a draught of water can conceivably infect with typhoid fever a susceptible individual, this would be a serious matter: but if, as seems more probable, a number are always or usually required to start the infective process, and they are present as individuals and not as 'clumps,' and are equally distributed through filtered water, infection might seldom, if ever, take place." Recent study of the bacteriology of water would appear to indicate that the observer who maintains that the bacillus typhosus is the causal organism of typhoid fever will be obliged to assume either (*a*) that something must be conjoined with the bacillus if it is to be "effective," or (*b*) that no final deduction can be drawn from the presence of single bacilli, and that insistence must be laid on the question of dosage.

Tuberculosis.

It is shown by a diagram that in both sexes a marked decline has occurred in London mortality from tuberculous phthisis; that males are more liable than females to fatal attack; and that until recent years the decline has been most conspicuous among females. A table is given showing phthisis mortality in 1913 in groups of London districts arranged in order of "social condition." If, for example, the London phthisis rate be taken at 1000, the rate in the more favoured districts will be represented by 547 and in the less favoured districts by 1389. A point of considerable importance, showing the influence of the population movement on the phthisis death-rate, is this—that in areas of better social class a greater number of London residents of the better class, than of the poorer classes, die away from Greater London. In his remarks on local variations of tuberculous mortality Dr. Hamer compares its age incidence in this country with that of Ireland, Prussia, and the United States of America. Illustrative curves have been prepared which show a

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING FEBRUARY, 1915.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1914.	NOTIFIED CASES OF INFECTIOUS DISEASE.												DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON...	**4,516,612**	**7**	**1337**	**741**	**—**	**73**	**1**	**23**	**303**	**65**	**3**	**2553**	**7·4**	**3**	**280**	**36**	**70**	**110**	**16**	**63**	**578**	**1·7**	**7187**	**20·7**
West Districts.																								
Paddington	142,055	—	22	16	—	3	—	—	12	3	—	56	5·1	—	14	1	4	8	—	1	28	2·6	238	21·7
Kensington	170,817	1	25	24	—	1	1	—	6	4	—	62	4·7	—	12	1	5	4	1	2	25	1·9	270	20·5
Hammersmith	124,750	—	58	15	—	1	—	—	6	1	—	81	8·5	—	6	2	1	2	—	2	13	1·4	187	19·3
Fulham	158,849	6	66	11	—	1	—	3	16	—	—	103	8·5	3	23	5	1	8	1	2	43	3·5	270	23·0
Chelsea	63,791	—	15	4	—	1	—	—	1	1	—	22	4·5	—	—	1	—	—	—	2	3	0·6	104	20·3
City of Westminster	152,346	—	56	33	—	3	—	—	3	3	—	98	8·4	—	3	3	—	3	—	5	14	1·2	257	23·2
North Districts.																								
St. Marylebone	112,892	—	36	2	—	2	—	1	8	—	—	49	5·7	—	2	1	—	—	—	1	4	0·5	156	18·4
Hampstead	86,731	—	18	12	—	2	—	1	1	3	—	37	5·6	—	2	—	1	—	—	1	4	0·6	99	15·8
St. Pancras	212,497	—	56	30	—	3	—	2	15	3	—	109	6·7	—	7	—	2	7	—	2	18	1·1	374	22·8
Islington	324,764	—	93	55	—	3	—	3	24	1	—	179	7·2	—	5	4	9	10	2	5	35	1·4	552	21·6
Stoke Newington	50,454	—	14	5	—	—	—	—	1	—	—	20	5·2	—	4	2	1	—	—	—	7	1·8	80	19·7
Hackney	223,724	—	43	33	—	5	—	—	19	2	—	102	5·9	—	13	—	2	2	2	3	22	1·3	331	19·4
Central Districts.																								
Holborn	45,861	—	9	8	—	1	—	—	1	1	—	20	5·7	—	3	—	1	1	—	1	6	1·7	78	22·3
Finsbury	83,212	—	19	9	—	—	—	1	5	1	—	35	5·5	—	2	—	—	2	—	2	6	0·9	147	22·7
City of London	17,129	—	4	8	—	—	—	—	—	—	—	12	9·1	—	3	—	1	—	—	—	4	3·0	30	23·7
East Districts.																								
Shoreditch	108,869	—	28	13	—	2	—	1	14	—	—	58	6·9	—	1	—	1	4	1	3	10	1·2	171	21·2
Bethnal Green	127,662	—	63	52	—	2	—	2	20	1	1	141	14·4	—	23	2	3	5	1	4	38	3·9	212	22·5
Stepney	273,265	—	91	104	—	3	—	—	21	—	—	219	10·4	—	13	4	7	1	—	3	28	1·3	408	20·3
Poplar	160,222	—	27	20	—	2	—	—	13	1	—	63	5·1	—	14	—	1	2	—	2	19	1·5	285	23·0
South Districts.																								
Southwark	186,941	—	37	29	—	—	—	1	16	3	—	86	6·0	—	29	—	3	1	—	6	39	2·7	349	24·4
Bermondsey	124,213	—	44	30	—	2	—	1	9	1	—	87	9·1	—	11	—	3	15	—	2	31	3·3	237	24·8
Lambeth	296,724	—	75	41	—	3	—	2	16	7	—	144	6·3	—	20	1	6	6	1	2	36	1·6	498	21·5
Battersea	167,338	—	52	26	—	1	—	—	12	2	1	94	7·3	—	10	1	6	7	1	3	28	2·2	274	21·5
Wandsworth	338,998	—	79	34	—	11	—	1	12	4	1	142	5·5	—	23	2	3	6	2	2	38	1·5	417	16·1
Camberwell	262,020	—	68	33	—	3	—	3	16	—	—	123	6·1	—	19	3	4	1	2	4	33	1·6	387	19·1
Deptford	109,182	—	57	20	—	8	—	—	11	2	—	98	11·7	—	5	—	—	7	—	1	13	1·6	185	21·8
Greenwich	96,037	—	94	18	—	—	—	1	7	4	—	124	16·8	—	2	—	—	3	1	—	6	0·8	149	19·9
Lewisham	172,433	—	36	28	—	1	—	—	7	2	—	74	5·6	—	6	3	1	3	—	1	14	1·1	245	18·2
Woolwich	122,836	—	52	28	—	8	—	—	11	15	—	114	12·1	—	5	—	4	2	1	1	13	1·4	197	21·4
Port of London	—	—	—	—	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—

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* Including membranous croup.

† The death-rates are corrected for variations in sex and age constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

maximum incidence of mortality at ages 20–35 in Ireland, at 35–45 in England, and at 60–70 in Prussia, while the American curve exhibits two periods of high incidence—viz., at about the fortieth and seventieth years. These differences are discussed at some length in relation to fashion in nomenclature, to migration, and to varying degrees of urbanisation in the countries compared; and the conclusion is drawn that the very variable connotation of the expression "tuberculous" at different times and in different countries largely accounts for reported differences of age incidence. In support of this view attention is called to the fact that the American curve is suggestive of a blending of the English and Prussian curves; and the fact that a considerable proportion of America is of German origin is suggested as a partial explanation of this phenomenon.

I.—(B) ADMINISTRATION.

Tuberculosis schemes.—Under this heading Dr. Hamer gives account of the preliminary arrangements already in progress under the National Insurance Act for the treatment of tuberculosis. Briefly stated, the scheme contemplates the provision and maintenance of dispensaries by the borough and city councils, aided by grants from the County Council. The complete scheme for coördinating the work of the various agencies for the treatment of tuberculosis was only in draft at the end of 1913. The administrative action already taken will be summarised in the report for the ensuing year.

Health visitors.—Under the provisions of the London County Council Act of 1908 considerable progress has been made in securing a supply of suitably qualified women to give advice as to the proper nurture and management of young children. The Act makes provision for the payment of Exchequer grants in supplement of the salaries of health visitors. The Council holds that the status of health visitors should be equal to that of sanitary inspectors, and in determining the amount of subsidy they will take into account whether or not the salary proposed by the sanitary authority is commensurate with such status.

Vermin inquiry.—Increasing attention is now paid to the cleansing of verminous persons. A diagram has been prepared showing the seasonal prevalence of three kinds of vermin during the last five years. Distinct improvement has been secured.

Homeless persons.—The censuses of homeless persons taken in February and in late October show a large reduction on the numbers previously discovered. In fact, the number recorded last February was less than one-quarter of the number recorded in February, 1910, when the highest number was found.

(To be concluded.)

VITAL STATISTICS.

VITAL STATISTICS OF LONDON DURING FEBRUARY, 1915.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan areas. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the 10 diseases specified in the table was equal to an annual rate of 7·4 per 1000 of the population, estimated at 4,516,612 persons; in the three preceding months the rates were 12·5, 9·2, and 7·4 per 1000 respectively. The lowest rates in February were recorded in Paddington, Kensington, Chelsea, Stoke Newington, and Poplar; and the highest rates in Bethnal Green, Stepney, Deptford, Greenwich, and Woolwich. Seven cases of small-pox were notified during the month, of which 6 belonged to Fulham and 1 to Kensington; 5 small-pox patients remained under treatment at the end of the month in the Metropolitan Asylums Hospitals. The prevalence of scarlet fever showed no variation from that recorded in the previous month; this disease was proportionally most prevalent in Hammersmith, Fulham, Bethnal Green, Deptford, Greenwich, and Woolwich. The Metropolitan Asylums Hospitals contained 2989 scarlet fever patients at the end of the month, against 4956, 4431, and 3609 at the end of the three preceding months; the weekly admissions averaged 324, against 661, 445, and 317 in the three preceding months. Diphtheria was slightly more prevalent than it had been in January; the greatest proportional prevalence of this disease was recorded in the City of Westminster, the City of London, Bethnal Green, Stepney, Bermondsey, and Woolwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1630, 1663, and 1621 at the end of the three preceding months, had further declined to 1562 at the end of the month; the weekly admissions averaged 172, against 247, 177, and 160 in the three preceding months. Enteric fever was much more prevalent than it had been in the preceding month; the greatest proportional prevalence of this disease was recorded in Hackney, Wandsworth, Deptford, and Woolwich. The Metropolitan Asylums Hospitals contained 64 enteric fever patients at the end of the month, against 63, 68, and 50 at the end of the three preceding months; the weekly admissions averaged 13, against 8, 10, and 6 in the three preceding months. Erysipelas was proportionally most prevalent in Paddington, Fulham, Hackney, Shoreditch, Bethnal Green, Southwark, Deptford, and Woolwich. The 23 cases of puerperal fever notified during the month included 3 in Fulham. 3 in Islington, 3 in Camberwell, 2 in St. Pancras, 2 in Bethnal Green, and 2 in Lambeth. The 65 cases of cerebro-spinal meningitis included 15 in Woolwich, 7 in Camberwell, and 4 each in Kensington, Wandsworth, and Greenwich; and the cases of poliomyelitis belonged respectively to Bethnal Green, Battersea, and Wandsworth.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex and age constitution of the populations of the several boroughs. During the four weeks ending Feb. 27th the deaths of 7187 London residents were registered, equal to an annual rate of 20·7 per 1000; in the three preceding months the rates were 14·6, 16·7, and 19·6 per 1000 respectively. The death-rates during the month ranged from 15·8 in Hampstead, 16·1 in Wandsworth, 18·2 in Lewisham, 18·4 in St. Marylebone, and 19·1 in Camberwell, to 23·0 in Fulham and in Poplar, 23·2 in the City of Westminster, 23·7 in the City of London, 24·4 in Southwark, and 24·8 in Bermondsey. The 7187 deaths from all causes included 578 which were referred to the principal infectious diseases, of which 3 resulted from small-pox, 280 from measles, 36 from scarlet fever, 70 from diphtheria, 110 from whooping-cough, 16 from enteric fever, and 63 from diarrhœa and enteritis among children under 2 years of age. The lowest death-rates from these diseases in the aggregate were recorded in Chelsea, St. Marylebone, Hampstead, Finsbury, and Greenwich; and the highest rates in Paddington, Fulham, the City of London, Bethnal Green, and Bermondsey. The 3 fatal cases of small-pox all belonged to Fulham. The 280 deaths from measles were 116 in excess of the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal during the month in Paddington, Fulham, Stoke Newington, the City of London, Bethnal Green, Southwark, and Bermondsey. The 36 fatal cases of scarlet fever were 20 above the corrected average number, and included 5 in Fulham, 4 in Islington, 4 in Stepney, 3 in the City of Westminster, 3 in Camberwell, and 3 in Lewisham. The 70 deaths from diphtheria were 23 above the corrected average number; this disease was proportionally most fatal in Paddington, Kensington, Islington, Stepney, Battersea, and Woolwich. The 110 fatal cases of whooping-cough were 16 below the corrected average number; the highest death-rates from this disease were recorded in Paddington, Fulham, Bermondsey, Battersea, and Deptford. The 16 deaths from enteric fever were 5 in excess of the corrected average number, and included 2 each in Islington, Hackney, Wandsworth, and Camberwell. The mortality from diarrhœa and enteritis among children under 2 years of age was proportionally greatest in the City of Westminster, Finsbury, Shoreditch, Bethnal Green, and Southwark. In conclusion, it may be stated that the aggregate mortality in London during the month from the principal infectious diseases, excluding diarrhœa, was 41·5 per cent. above the average.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

To be Temporary Majors:—Dated March 8th: James Arthur Devine, D.S.O. Dated March 9th: William Thomas Prout, C.M.G.

The undermentioned Temporary Lieutenants to be Temporary Captains:—Dated March 25th: Charles S. Cato, late Captain, R.A.M.C., and Walter P. Yetts.

The undermentioned to be Temporary Captains:—Dated March 1st: Charles Edward Walker. Dated March 10th: Robert Fielding-Ould.

The undermentioned to be temporary Lieutenants:—Dated Feb. 28th: Arthur Wellington Matthew. Dated March 3rd: George Joseph Adams. Dated March 7th: Frederic Percy Joscelyne. Dated March 8th: George Stanley Deane, Henry Hawes Elliot, Roy Henry Rollinson-Whitaker, Alan Filmer Rook, John Sullivan, Harold Saunderson Sugars, Francis Gordon Bell, Frederick Orlando Clarke, James Keenan, Sydney Granville Tibbles, John Henry Tomlinson, Robert Lacy Kitching, Alexander Stanger Seabrooke, John Thomas Heffernan, Horace Fitzgerald Blood, and Eric Morse Townsend. Dated March 9th: Arthur Bloom and Hubert Lewis Clifford Noel. Dated March 10th: Oswald Herbert Edwards, Francis Irvine, Walter Smithies, Henry Harvard Davis, Walter Charles Campbell Kirkwood, Charles Ernest Sundell, John Dugald MacEwen, John Rodney Slack, Alfred Wallace Harvey, Timothy Sheehan, Alan Wiley, Francis Swanson Hawks, James Anderson Hutchinson, John Helby Wilkinson, Frederick Henry Rudge, Norman Gerald Horner. Dated March 11th: Douglas Compton Taylor.

SPECIAL RESERVE OF OFFICERS.

Supplementary to Regular Units or Corps: Royal Army Medical Corps.—Lieutenant Owen G. Parry-Jones is confirmed in his rank.

ROYAL NAVAL VOLUNTEER RESERVE.

The following appointments have been notified:—Surgeon Probationers: G. E. Mullins to the *Ruby*, G. B. Lowe to the *Defender*, W. F. R. Castle to the *Panther*, T. C. Wakefield to the *Owl*, J. T. Wylie to the *Shark*, F. A. V. Denning to the *Garland*, A. McA. Scott to the *Lennox*, and C. Suffern to the *Contest*.

TERRITORIAL FORCE.

Army Medical Services.

The appointment of Lieutenant-Colonel Henry G. Falkner as Assistant Director of Medical Services, with the temporary rank of Colonel, bears date Feb. 3rd.

Royal Army Medical Corps.

South Wales Mounted Brigade Field Ambulance: Major James MacK. Harrison to be Lieutenant-Colonel. Lieutenant Josiah Browne to be Captain (temporary).

3rd East Anglian Field Ambulance: Captain John R. Pooler to be Major (temporary).

3rd London (City of London) Field Ambulance: Alfred Norman George Jeans to be Lieutenant.

1st North North Midland Field Ambulance: Frank Pearce Sturm to be Lieutenant.

3rd Southern General Hospital: Captain Robert L. Gamlen resigns his commission on account of ill-health.

3rd Home Counties Field Ambulance: William Cummings to be Lieutenant.

3rd London General Hospital: Captain Sidney M. Smith is seconded.

1st London Casualty Clearing Station: Alexander Urquhart to be Lieutenant.

South Midland Casualty Clearing Station: Alexander Watkin Nuthall (late Captain, 5th Battalion, Royal Warwickshire Regiment) to be Captain.

2nd South Midland Mounted Brigade Field Ambulance: Captain Henry G. Magrath to be Major (temporary).

2nd East Anglian Field Ambulance: Captain Alister C. Young is seconded.

1st Home Counties Field Ambulance: Francis Seymour Jackson to be Lieutenant.

4th London Field Ambulance: Transport Officer and Honorary Captain Alfred J. Messent resigns his commission.

2nd Eastern General Hospital: Cyril Casson Messiter to be Lieutenant.

Attached to Units other than Medical Units.—Lieutenant Alfred J. Gibson to be Captain. To be Lieutenants: Lieutenant Lionel G. Pearson (from the 4th London Field Ambulance), Lorton Alexander Wilson, and Frank Jeffree.

SOCIETY OF MEDICAL OFFICERS OF HEALTH: SCHOOL MEDICAL SERVICE GROUP.—A meeting of the group will be held on Saturday, April 10th, at 3.30 P.M., at the society's offices, 1, Upper Montague-street, Russell-square, London, W.C. The annual meeting, postponed on account of the war, will be held at 3.30 P.M., and the general meeting immediately after tea at 4 P.M. Several items of very considerable importance to officers in the service, brought up by members or referred to the group by other official bodies, will be considered. Communications should be made to the honorary secretary of the group, Dr. A. Ashkenny, 2, London-road, Basingstoke.

Correspondence.

"Audi alteram partem."

THE WAR AND SYPHILIS.

To the Editor of THE LANCET.

SIR,—One of the results of the war which is already making itself felt is the difficulty of obtaining salvarsan or neosalvarsan, and the small stock of these preparations in this country must very shortly be exhausted. At the Lock Hospital in Dean-street, W., the demand for injections of these substances has recently been considerable, and is now far in excess of the supply which can be obtained by that institution. The average number of injections given weekly has up to recently been about 50, whereas it is now reduced to half that number, and in some instances one full dose has been divided between two cases. Consequently the institution has recently been compelled to have recourse to some of the substitutes for salvarsan, and though the results have been fairly satisfactory I am bound to say that they do not compare favourably with those obtained by the original preparations of Ehrlich. In proof of this I will mention two instances which have recently come under my observation.

CASE 1.—A patient with a secondary syphilide, who had been treated with weekly injections of "grey oil" from Oct. 31st to Dec. 12th, was found to have such symptoms of mercurialism as to render any further treatment with that drug inadvisable. Accordingly, on Jan. 2nd he was given an injection of novarsenobenzol "Billon," a French preparation which is said to be identical with neosalvarsan, and is recommended for its innocuousness. The injection was followed by only a slight immediate reaction, but at his next visit to the hospital on Jan. 9th the patient was found to be suffering from an acute dermatitis of the shoulders and hands, which in the following week was so severe as to necessitate his admission into the wards of the hospital. The dermatitis was then generalised and universal; the mucous membranes of the nose, mouth, and conjunctiva were intensely inflamed, his feet were œdematous, but there was no irritation of the intestinal tract, and the urine was normal. The dermatitis was followed by most extensive desquamation, so much so that large flakes of epidermis could be removed from the sheets of his bed literally in handfuls. He suffered from a severe purulent conjunctivitis and intense photophobia, his eyelashes were almost completely shed, as was also the hair at the back of his head. At the present time, 12 weeks after the injection, there remains an extensive xeroderma and erythema of the skin, with pustular dermatitis of the lips and hands. His condition, which at one time gave rise to the gravest anxiety, is now improving, and the prospects of his ultimate recovery are favourable.

CASE 2.—A patient suffering from secondary syphilis was admitted into the hospital on March 9th and given an injection of "kharsivan," a preparation of Messrs. Burroughs, Wellcome and Co., which is said to be identical with salvarsan; this was followed by no reaction, and he was given a second injection on March 17th. On March 19th the patient experienced severe aching pains all over the body; conjunctivitis and œdema of the eyelids and lips; diffuse and universal desquamative dermatitis, and biliuria. These symptoms are now subsiding.

My experience of these two cases leads me to think that the substitutes for salvarsan differ in their effects so far from the original preparations as to necessitate the greatest care in their employment. The two cases I have alluded to were such perfectly healthy subjects that no ill-effects could possibly have been anticipated from salvarsan treatment. In the course of an experience of this treatment extending over five years, I have never met with any cases which were followed by such intense symptoms of arsenical poisoning, and the only conclusion I can arrive at is that, though chemically the substitutes for salvarsan may be identical with the original preparations, from the clinical point of view they differ in a remarkable manner. Not only is their toxic effect, *qua* arsenic, much more intense, but their local effect on the veins is more irritating, as was manifested by several cases of thrombosis of the injected vessel following on the use of kharsivan, even when diluted with 200 c.c. of distilled water.

It is impossible to estimate the duration of the present war, but when it does come to a conclusion there will inevitably ensue a considerable increase in the incidence of venereal diseases, and in my opinion some measures should now be organised to ensure that adequate provision is made for their treatment. I am given to understand that Messrs. Burroughs, Wellcome and Co. at the present moment are experiencing some difficulty in meeting the demand for kharsivan, and if there is any great increase in the prevalence of syphilis a considerable proportion of the sufferers will be unable to obtain what is now universally acknowledged to be the best treatment for that disease—viz., salvarsan, or, failing that, one of its substitutes. Though all departments of the Government must now be working at high pressure, I venture to think that the inevitable increase in venereal diseases at the termination of the war is a subject worthy of the attention of those to whom the health of the nation is entrusted.

I am, Sir, yours faithfully,
J. ERNEST LANE, F.R.C.S. Eng.,
Surgeon to the London Lock Hospital.
Queen Anne-street, W., March 28th, 1915.

SHOULD MEN WORK SIX DAYS OR SEVEN?

To the Editor of THE LANCET.

SIR,—At the present time, when there is urgent necessity that munitions of war should be turned out with the greatest possible rapidity, it is very important that men engaged in their manufacture should be able to do the maximum amount of work with the minimum of harm to themselves. In relation to this question I think that an experiment made many years ago by my friend, the late Lindsay Russell, Surveyor General of Canada, is of great interest. Along with Professor Pearce, who represented the United States, he surveyed the boundary line between the United States and Canada so exactly that I believe its accuracy has never been called in question. On this expedition, or some of his other surveying journeys, he and his men had to pass over great spaces where there was neither game nor fishing, and were therefore obliged to take their provisions with them. The forts at which these could be replenished were generally placed about 40 days' march from each other, and as the surveying party, on account of the weight, only took sufficient provisions for the distance and no more, they were obliged to cover it in a given time for fear of starvation. On some occasions he had men and horses and on others men and dog trains. Necessity obliged him to work his men and animals as hard as they could for seven days a week and six weeks at a time. Under this strain the horses usually gave out about the twentieth day, but the men and dogs seemed to be uninjured and only to grow harder and harder. On other occasions, however, when there was no necessity for such extreme exertion he worked his men only six days a week and allowed them to rest completely on the seventh. As he was engaged in surveying operations he knew exactly how many miles his party had travelled in a day; he knew how many pounds weight each man carried, and was thus able to calculate exactly in foot-pounds the amount of every man's daily work. On reckoning it up he found, to his astonishment, that the number of foot-pounds done by the men working six days a week was almost the same as when they worked seven days a week. Although the men were able to work seven days a week to their utmost capacity all day in the open air, and sleeping in the open air all night for seven days a week without harm, it is unlikely that men working under much less favourable conditions in a factory will stand continuous work in the same way as the surveying party. In all probability if the men work at their full capacity for six days it will be better both for them and the work they turn out that they should rest on the seventh.

I am, Sir, yours faithfully,
T. LAUDER BRUNTON.
De Walden Court, W., March 29th, 1915.

LOUIS DANIEL BEAUPERTHUY AND MOSQUITO-BORNE DISEASES.

To the Editor of THE LANCET.

SIR,—Regarding the discussion between Dr. Andrew Balfour, Dr. H. Seidelin, and myself on this subject in THE LANCET of March 6th and 27th, no one wishes to deprive Beauperthuy of all the "respect and reverence" due to him as a man and a physician, but whether he was "a very great and far-seeing physician" on the strength of his hypothesis on insect-borne diseases is the question at issue. We cannot deny that he was one of those who adhered to the idea that insects are in some way connected with diseases, but, as I have said, this old hypothesis dates from the time of the Romans. My point is that his explanation of this connexion was a wrong one—that is, he thought that diseases are caused by the venom of insects and not by their capacity to carry the virus from one person to another. Moreover, from what I have seen of his writings, he seems merely to have advanced the speculations in a non-scientific manner—that is, as so many prophets do, in the form of a categorical imperative. I much prefer King's work because, in Dr. Balfour's words, "he marshalled his theories in a more logical and careful fashion." That is the whole point. One appears to me to have been a dreamer (though more careful studies of his work may correct this impression of mine), while Dr. King appears to me to have been a man of science. Moreover, King did not think that mosquitoes cause disease merely by their venom, but evidently supposed (see p. 656 of his paper) that they transmit a Bacillus malariæ—a much more rational hypothesis. Beauperthuy's hypothesis was, as I have said, contrary to reason. I am glad that Dr. Balfour agrees with what I maintained about the difference between speculation and careful research work, and that is why I mentioned the case of Beauperthuy. It has become quite a profitable art nowadays to confuse the two, though anyone can indulge in unlimited armchair speculation, while research means much toil.

Whether Beauperthuy's "zancudo bobo" was really the Stegomyia fasciata is another question, and I hope that Dr. Balfour will let us know what he thinks on this point when he has read the original papers. I wish that someone could find the papers on the mosquito theory: (*a*) by John Crawford, called Mosquital Origin of Malarial Disease, *Baltimore Observer*, 1807; and (*b*) by J. C. Nott on the Origin of Yellow Fever, *New Orleans Medical and Surgical Journal*, 1848. I have not been able to obtain either of them. All these theories are of considerable psychological interest. They were all partly right and partly wrong, and the true story now known to us shows how much more clever nature is than the wisest of us.

I am, Sir, yours faithfully,
Cavendish-square, W., March 27th, 1915. RONALD ROSS.

STOMACH *V.* HEART IN RELATION TO PRÆCORDIAL PAIN AND SUDDEN DEATH.

To the Editor of THE LANCET.

SIR,—Certain persons suffer from discomfort and pain in the præcordial region when they walk, especially uphill and soon after eating, but the moment they throw off gas from their chests or stand still their discomfort vanishes. Persons thus affected are prone to sudden death. The pain and the sudden death, when it occurs, are commonly, but erroneously, ascribed to functional or organic disease of the heart. The following case is a typical example of the class:—

> The patient, aged 48 years, had always had good health except in the matter of his digestion. Sweet foods turned sour on his stomach and distended it with gas. He was a "windy" subject, but looked robust and in good flesh. A few weeks before visiting me he became conscious of a disability which seemed likely to prevent him from following his occupation, for when he walked, particularly if soon after eating, he was seized with a most disagreeable sensation in the chest, merging into pain. No evidence of cardiac disease was detected. There was no increase in the area of cardiac dulness, no abnormal cardiac sounds, dyspnœa, or œdema, no abnormality in pulse-rate or rhythm. About five weeks after this examination, after a hearty afternoon meal, the patient left the house. When about 200 yards from his own door he fell down and was picked up dead. No lesion accounting for death was found at the necropsy. All his organs were healthy. The cardiac valves were normal and the myocardium thick and free from disease. The coronary arteries were sound, save for one or two small foci of commencing ossification. Their pathological condition was such as might be expected in persons dying at the same age from indifferent complaints.[1]

The manner in which seizures affected this patient is thus described in his own words:—

> When I leave home in the morning I usually feel quite well, but after walking 100 paces or more I am conscious of an uncomfortable sensation at the stomach and a desire to expel gas from the chest. I have also a feeling as if a piece of crust had become lodged in my gullet, pain creeps up from the pit of the stomach to the chest and spreads all over it, sometimes reaching the armpits, shoulders, and back, and even extending to the neck and jaws. Water gathers in my mouth and runs out upon my chin; it is neither retched nor coughed up, but comes into my mouth on its own. My eyes fill with tears; sometimes urine dribbles away from the bladder in spite of my efforts to prevent its escape. If at this time I can break wind from the chest all this discomfort vanishes in a second. So every now and then I stop and retch and throw gas from my chest, and when all is thrown off I can walk as well and as far as I ever did before. But sometimes the gas is hard and will not come up, and then a dreadful feeling comes over me; it is as if my head swims and my chest is gripped and held tight, and all strength is going from my limbs, but even when no gas comes up, if I stop walking and remain for a few seconds standing still the seizure passes off.

When asked what distance he had walked upon any occasion just after the occurrence of seizures, the patient said:

> On Bank Holiday, soon after starting from home in the morning, I was taken with a seizure which was followed by two others, but after I had stood still for a few seconds and broken up wind I walked on without having to stop again and visited a friend living five miles away. That morning I walked ten miles, counting the journey there and back again, without being troubled with any pain whatsoever; indeed, I never felt better in all my life than during that walk.[2]

The fact that the patient walked ten miles just after three seizures indicates that exhaustion of reserve power of the function of contractibility is not the causal agency of these seizures.

From a consideration of the description of this seizure, and seizures of a similar kind which have occurred in other patients under my notice, it is to be remarked that segments of the medulla and cord, secretory glands, and parietal, visceral and cardio-arterial layers of muscle, take part in the manifestations of the seizure. Consequently symptoms constituting the syndrome are divisible into five groups: (1) The central nervous group comprises referred pain felt in the distributory areas of the brachial plexus and the second, ninth, and intermediate intercostal nerves, and algesia affecting scattered patches of the integuments and deeper structures of the thoracic wall and adjacent parts; (2) the secretory group comprises a voluminous flow of watery saliva and increased secretion of lacrymal glands with probably also increased urinary secretion; (3) the parietal muscular group comprises contractions of facial, intercostal and abdominal muscle, the latter contractions producing a sensation of pressure over the thoracic wall described by some as fixation or tightness of the chest walls; (4) the visceral muscular group comprises nausea, retchings, and eructations resulting from contractions of the gastro-œsophageal sheet and diaphragm; and (5) the cardio-arterial muscular group comprises vaso-constrictions, elevation of blood pressure, abnormal deviations in pulse-rate and disturbances of rhythm and sometimes total inhibition of cardiac function.

The seizure consists of the associated manifestations of these several groups of symptoms. The muscles and secretory glands which produce groups 2 to 5 inclusive are not in functional communication with one another except through the central nervous system. Hence the central nervous system furnishes the link that connects in a unity of expression the several activities that produce the seizure. The central nervous system must therefore be regarded as the seat of the predisposing cause, otherwise the activities producing the seizure would fail to combine in unitary expression. For if the heart be the seat of the predisposing cause, how are symptoms witnessed during seizures to be accounted for? If segmentary centres be healthy can impressions from the myocardium cause cramp in the recti abdominis muscles or agonising pain in the distributory regions of intercostal nerves? Can impressions generated in the myocardium cause nausea, overflow of saliva, retching, eructations of gas, and vomiting? Through what mechanism can impressions emanating from the myocardium cause vaso-constriction in systemic arterioles and an elevation of blood pressure? Without an appeal to a disordered central nervous system can any disease of the heart cause instant death? Even in complete heart-block the ventricle, if robust, still bears the burden of rhythm.

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[1] At the necropsy made upon the "unknown" by John Hunter and described by Heberden the vessels were found healthy and the heart sound and vigorous.—Medical Transactions of the Royal College of Physicians.

[2] Cases in which long walks are taken after seizures are not infrequent. Dr. Mackenzie refers to cases of this kind in the Oliver-Sharpey lectures.

It may be replied that disturbance of myocardial function causes hyper-irritability at segmentary centres of the thoracic cord, and as a result of this morbid condition the symptoms indicated above appear. But apart from the fact that dendritic connexion between the myocardium proper and segments of the thoracic cord is not open to proof, this statement merely affirms that the predisposing cause of the seizure really lies in the central nervous system, and that the remote cause of the seizure is to be found in the myocardium. The hypothesis that the myocardium is the seat of the predisposing cause is therefore an absurdity. The same method of argument is applicable to all the other alternative propositions. A confirmatory symptom is present during seizures and at intervals between them—viz., patches of algesia are found in the distribution of intercostal and spinal accessory nerves. Strands of the brachial plexuses in the posterior cervical triangle and branches of the plexuses in the arms are tender upon pressure. This symptom appears in regions where pain is never felt and at seasons when the patient is at rest and when seizures are in abeyance. In a certain case examinations have been made by me on frequent occasions during an illness of three years' duration, and in no instance has this symptom been entirely absent. But algesia shifts its ground from day to day—patches appear in a zonal area, remain in evidence for a few hours, disappear and reappear. Charts showing the distribution of patches of algesia are never found alike upon two days in succession. Precisely the same characteristics are noticed even at intervals when no seizures are occurring. It is evident that it is not the seizure which makes the patch, but that neurosis of segmentary centres determines both patch and seizure. Hence we are in a position to infer that a state of neurosis at segmentary centres is the predisposing cause of seizures, and that vagal inhibition is the cause of death.

This conclusion is important because segmentary neurosis is the predisposing cause of diseases belonging to the class of the paroxysmal spasmodic disorders associated with the musculature of the alimentary canal. In members of this class seizures occur in connexion with food-taking and gastro-œsophageal hypertonus; they also occur from mental and emotional excitement and from muscular effort; in them both visceral and parietal layers of muscle are engaged in spasm. Consequently they resemble the anginal seizure in other features besides that of predisposing cause. A neurosis attended by intercostal hyperalgesia ensues when dendritic fibres belonging to the affected centre traverse pressure zones of hyperplasias, aneurysms, new growths, and pericardial and pleuritic adhesions. Hence these diseases as well as gastric disorders may be regarded as potential remote causes of anginal pains and seizures.

I am, Sir, yours faithfully,
H. WALTER VERDON.

Streatham Hill, S.W., March 19th, 1915.

INFLUENZA OR EPIDEMIC CATARRH.

To the Editor of THE LANCET.

SIR,—As a bacteriologist I often have to suffer mental pain at the misuse of the term "influenza," and therefore I should like to record my cordial agreement with the general principles laid down in your leading article on this subject in THE LANCET of March 6th, at the same time apologising for the belatedness of this letter. I must, however, say that my experience of this epidemic appears to entirely negative the doubt expressed in the article as to the existence of a definite epidemic due to Pfeiffer's bacillus. My experience was as follows: Up to Jan. 19th I had seen no cases of recently contracted influenza infections for some months, and it would appear that at that time I was not alone in that experience, for we, at St. Mary's Hospital, were a few days prior to that date asked for a culture by the Lister Institute and were not immediately able to supply it. It was, however, supplied from a culture isolated from a case of bronchial catarrh I saw on Jan. 19th. From that date to March 1st I isolated Pfeiffer's bacillus from 14 more cases, and from March 1st to date I have isolated five more strains. The cases were not hunted for; they came in the ordinary routine of practice, and vaccines were made, or will be made, in each case but one, where a lady apparently contracted the infection from her husband and his vaccine was deemed appropriate. Other two of the cases were those of husband and wife.

My general impression has been that the epidemic, though widespread, has not produced many severe cases. Moreover, I think that the organisms have been a degree more difficult to cultivate than in former epidemics. I may say that I rely only to a slight extent on the initial impression gained by the microscopical examination of a film, and indeed I find that nothing short of the employment of an agar plate, rich in fresh blood, gives one any confidence in giving an opinion. This, I imagine, is the experience of every competent bacteriologist. The recently existing epidemic was so general that I think one was quite justified in exploiting stock vaccines of Pfeiffer's bacillus for the treatment of acute catarrhs of upper respiratory passages, to discount the delay entailed in making exact diagnosis by cultural methods.

But, Sir, if THE LANCET be doubtful as to the bacterial cause of a widely spread and definite epidemic, what expectation can there be that the profession at large is in possession of approximately accurate knowledge on the subject? It would seem that there is urgent need of some kind of bulletin for issuing information as to the bacterial cause of prevailing epidemics of catarrh.

I am, Sir, yours faithfully,

Wimpole-street, W., March 23th, 1915. JOHN MATTHEWS.

CERTAIN PECULIAR CRYSTALS FOUND IN CEREBRO-SPINAL FLUID.

To the Editor of THE LANCET.

SIR,—Dr. W. W. D. Thomson has contributed an article to THE LANCET of March 27th under the above heading, and has taken considerable pains to describe and have examined by Mr. A. R. Dwerryhouse certain crystals which he found mingled with the pus in a case of septic meningitis. I am afraid he has been led astray and fallen badly into one of the numerous traps set for the pathologist. The crystals he describes have been deposited from the water in which the bottle or syringe has been boiled for purposes of sterilisation. I would suggest that Dr. Thomson verifies this by boiling some tap-water in a test-tube for a short time, let it cool, and then examine the deposit.

Some years ago these crystals gave me trouble by obscuring to a certain degree the scanty deposit of cells found in tabetic and many tuberculous cases, especially the latter. In films stained with carbol-fuchsin for tubercle bacilli the crystals retain some of the stain, and so may cause confusion. Since that time I have always used test-tubes sterilised by boiling in *distilled* water or, better, in a dry oven. Dr. Thomson does not state whether the staphylococci were numerous on the agar tube or whether they were Gram-positive. Nor does he indicate whether the colonies were white or yellow. It is a pity the streptothrix was not more fully investigated.

I am, Sir, yours faithfully,

Harley-street, W., March 28th, 1915. ERNEST H. SHAW.

A NEW TYPE OF FRACTURE OF THE ANKLE.

To the Editor of THE LANCET.

SIR,—The important injury referred to under the above heading in an annotation in your issue of March 27th was fully described by Etienne Destot in his book "Traumatismes du Pied et Rayons X," published in 1911. Dr. F. J. Cotton's advice to treat this posterior marginal fracture of the lower articular surface of the tibia by fixing the foot in the fully dorsiflexed position I can endorse from experience. I emphasised this point in an article[1] last year. When the backward displacement of the foot cannot be wholly corrected by dorsiflexing the foot under an anæsthetic, and in cases in which the proper treatment has not been carried out in time, open operation is necessary. In the *Polyclinic* of August, 1913, was recorded a case in which I fixed the tibial fragment by a Lane's plate. This fracture so often complicates Pott's fracture, bimalleolar fracture, and other common injuries at the ankle that I suspect its presence until contrary proof is afforded by good radiograms.

I am, Sir, yours faithfally,

J. JACKSON CLARKE.

Portland-place, W., March 29th, 1915.

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[1] Open Operations in the Treatment of Fractures and Dislocations, Universal Medical Record, 1914.

NURSE-MIDWIVES IN CORNWALL.—At the annual meeting of the friends of the Cornwall County Nursing Association, held last week, it was suggested that the Local Government Board would help to establish qualified nurse-midwives in scattered country districts where there was no resident midwife, and often no doctor, and where it was impossible to provide locally sufficient funds for the maintenance of a nurse.

ROYAL GLOUCESTERSHIRE INFIRMARY. — The annual meeting of the subscribers to this institution was held on March 25th, under the presidency of Colonel Curtis Hayward. The medical report stated that during the year 1619 in-patients, including 133 soldiers, were admitted—the largest number of admissions on record. 7381 out-patients, including 786 soldiers, were treated, an increase of 300 compared with 1913. The financial statement showed an unfavourable balance of £1144 at the close of 1914.

The War.

HONOURS LIST.

Lieutenant Edmund Hume Moore, R.A.M.C., attached to the 2nd Battalion the Leicestershire Regiment, has been appointed D.S.O. for distinguished gallantry on Feb. 23rd near Richebourg L'Avoue, in going with another officer (Captain N. A. Morgan, 2nd Battalion of the same regiment, also appointed to the Order) and a stretcher-bearer to within 150 yards of the enemy to attend to a wounded soldier. The stretcher-bearer was also wounded, and both wounded men were successfully carried to the rear. On the next day Lieutenant Moore again dressed a wounded man under the direct aimed fire of the enemy and was himself wounded.—Lieutenant T. W. Clarke, R.A.M.C., has been awarded the Military Cross for conspicuous gallantry and great devotion to duty during six months. On March 5th, when the 14th Field Ambulance was destroyed by a shell, killing one officer and five men and wounding 19, Lieutenant Clarke continued to attend to the wounded though wounded himself, until he collapsed.

THE CASUALTY LIST.

Since our last issue the casualties reported in our Expeditionary Force include the names of Captain H. S. Cormack, I.M.S., Lieutenant H. M. Mackenzie, R.A.M.C., Lieutenant R. F. Wilkinson, R.A.M.C., and Lieutenant J. W. Cannon, R.A.M.C., all wounded.

Dr. J. C. Fox, a medical missionary, whose name was included in the official list of missing from the roll of the *Falaba*, is announced to have been saved.

THE INCREASED PREPARATIONS FOR THE WOUNDED.

The need for a greatly increased supply of nurses, to which we referred in these columns last week, has since been emphasised by the appeal of the Director-General of the Army Medical Service to civil hospitals with training schools. After gratefully acknowledging the great help which these hospitals have already given, Sir Alfred Keogh asked them to still further assist the country by making every effort to train for three or six months as many probationers as possible, so that they may be available for work later under supervision in military hospitals. The appeal under present circumstances is fully justified, though the scheme will undoubtedly require careful organisation in order to overcome difficulties which existing conditions present.

The London Hospital has already anticipated a brisk demand for nurses with only a short training, and the authorities at St. Bartholomew's Hospital have expressed their willingness to accept immediately pupils for a short course of practical nursing, but other training schools have not yet seen their way to adopt the course suggested at present. Lack of adequate accommodation for those who are undergoing complete training no doubt presents very real difficulties in some institutions already working at full pressure. There can be no doubt, however, as to the necessity for providing a sufficient number of trained women to look after our sick and wounded, and mutual goodwill should not find it difficult to readjust existing conditions to present needs. It is announced that candidates from hospitals of 50 beds will be accepted if suitable in other respects. Candidates between the ages of 35 and 45 who are accepted will serve for a year either at home or abroad, but for home service this age-limit will be extended, especially for the higher posts. Women outside the ranks of fully or partially trained hospital nurses will be accepted in certain hospitals as probationers for a month, and if found suitable may sign on for a year or for the duration of the war. The age-limits are from 23 to 38. It is estimated that some 3000 carefully chosen certificated women will be required.

The need for nurses has also brought home to the public the circumstance that nurses who have suffered, or may suffer, from attendance upon the sick and wounded during the war have no adequate provision made for them in return. The originating of a Fund for this purpose has occurred to Miss Swift, matron-in-chief of the joint committee of the Order of St. John of Jerusalem and the British Red Cross Society, and an appeal has been issued, accompanied by a promise of £1000 from the Red Cross Society, and of a similar sum from the Order of St. John of Jerusalem. The patrons of the Fund are Queen Mary and Queen Alexandra, and the committee includes many who have a practical knowledge of nursing. The address of the Fund is 15, Buckingham-street, Strand London, W.C., and cheques may be made payable to Sir Everard Hambro, the chairman and treasurer, and crossed the Bank of England, or they may be sent to the Bank of England to be placed to the credit of the Fund. Nurses on the staffs of the Navy and Army and in the Reserve and Territorial Forces are already provided for, but no provision has hitherto been made for civil nurses, while the risks which they run of being incapacitated from work are extremely great, for many are working in hospitals where, in addition to the dangers from shot and shell, the perhaps greater dangers resulting from insanitary environment are added. We are glad to learn that the public is responding well to the call for help in this direction.

No special generosity to nurses at the present moment must, however, be allowed to interfere with a careful investigation of the question of their payment. We feel sure that under the Royal patronage which it commands, and with the able judgment of a strong committee, the new Fund will receive all the support which it requires to carry out its beneficent work; but it is necessary, also, that we should face the whole question of the pay of nurses fairly and squarely.

KITCHENER'S INDIAN HOSPITAL.—There has been established at the old Brighton Poor-law Institution a large Indian general hospital, known as Kitchener's Indian Hospital. This is in addition to the Indian hospitals at the Dome and York-place School. The hospital is situated on an open elevated spot in the town, adjoining the racecourse and close to the open downs. The staff of the hospital is mainly derived from members of the Indian Medical Service, with a number of native Indian medical officers assisting. The officer in command is Colonel Sir Bruce Seton, of Simla, honorary surgeon to the Viceroy. The medical and surgical wards, which contain altogether about 1700 beds, vary in size, the smallest holding eight, the largest about 50. They are well arranged and comfortably appointed. There are separate huts for infectious cases and a special ward for all tuberculous patients, where open-air treatment is available. There is also a ward for lunatics, which is fitted out with all modern improvements, including padded cells, wire-gauze windows, and protected radiators and electric lights. There are three operating theatres, with sterilising rooms adjacent, but up to the present not many operations have been performed. Now that many cases of bullet wound are being admitted, the number will rapidly increase.

The electrotherapeutic department is fitted out with every requirement for this branch of medicine. There are 12 Dowsing radiant-heat beds and smaller apparatus for the treatment of limbs and joints in this way. Many cases of trench rheumatism and frost-bite have been thus treated with very satisfactory results. There are also a universal machine for galvanism, faradism, sinusoidal current, light, cautery, and vibratory massage, a high-frequency apparatus, and a Schnee's four-cell bath for hands and feet, which can be used for galvanism, faradism, and sinusoidal currents. The pathological department has all the modern apparatus required for the pathological examination of urine, blood, sputum, and cerebro-spinal fluid, the preparation of vaccines and sera, and the various pathological tests, such as Wassermann's and Widal's, an autoclave, electric centrifuge, hot-air steriliser, and incubators. The pathological work of all the Indian hospitals in the town is carried out here. The X ray department is similarly equipped with all the latest instruments necessary for diagnosis and treatment. As a matter of routine every bullet wound is examined here, and when one remembers that on one day 500 cases of this nature were admitted, it will be realised how busy the officers of this department are kept. The nursing is all done by men, either Royal Army Medical Corps or native Indian orderlies. As all these were untrained on enlistment it is as gratifying as it is surprising that the nursing has so far, on the whole, been considered satisfactory both by the medical staff and the patients. When the more serious cases are admitted, such as enteric fever, pneumonia, compound fracture of the lower extremity, gunshot wounds of the spine, abdominal operations, and such-like, it will then probably be found absolutely necessary to add some highly trained and fully qualified nurses to the hospital equipment. At present no women are employed in the hospital in any capacity whatever.

There is everything within the hospital to make it self-contained—a steam laundry, a barber's shop, a dry canteen, three linen disinfectors, a linen store, a pack store, even cells for prisoners, a rifle-range, a gymnasium, recreation rooms for the men, a hut village for the staff capable of holding 400, special quarters for wounded native officers, with their own nursing staff and cooks. In fact, little if anything has been omitted which could possibly have been included in the equipment of the institution. All records, whether of admissions, of deaths, of special treatments, such as X ray examinations, pathological treatment, and so forth, are kept on the card-index system, and thus the record of all patients can be traced with the minimum of trouble. All the sanitary arrangements are made to comply as far as practicable with native customs, and the same applies to the burial of the dead. So far there have been very few deaths, only three in the total admissions, which number 1200. The diet of the patients is naturally quite different from that of our own men. The ordinary diet consists of 8 ounces of meat, with *atta* or rice, *dhall* or peas, butter or *ghee*, potatoes, fresh vegetables, fresh fruit, onions, tea, *gur* or sugar, chillies, turmeric, garlic, salt, and milk. There are three meals—breakfast, mid-day meal, and supper.

The convalescent patients are kept fit by light duties and daily route marches, and every care is taken of them whilst out for walks or going to places of entertainment. They always go under escort. When it is known that races so different as Sikhs, Gurkhas, Pathans, Punjabis, Dograhs, Garhwalis, Afridis, Baluchis, and Mahrattas are among the admissions, it will be seen that a good deal of management is required to make all the arrangements satisfactory. Colonel Sir Bruce Seton is to be heartily congratulated on the success that has attended his efforts to convert the Poor-law Institution into one of the most up-to-date and best equipped military hospitals in the kingdom.

VOLUNTARY AID DETACHMENTS, BRITISH RED CROSS.—We are asked to state that the Voluntary Aid Detachments Selection Board of the British Red Cross Society has moved from 83, Pall Mall, to Devonshire House, Piccadilly. The hours for interviewing candidates are 10 to 1 every day, and 2.30 to 4.30, with the exception of Wednesdays and Saturdays.

The Medical Plight of Serbia.—The plight of Serbia in the grip of typhus fever is serious, and unless the other nations come to the aid of this gallant little State disease will finish off what the more immediate brutalities of war have spared. We have heard through the press what Sir Thomas Lipton saw there, and on March 22nd a large meeting was held at the Mansion House in support of the Serbian Relief Fund, whose headquarters are at 55, Berners-street, W. Various units have been at work in Serbia. Lady Wimborne sent out 4 medical men and 42 orderlies and nurses on behalf of the Serbian Relief Fund, while Lady Paget, who is in charge of another unit at Uskub, is herself down with typhus fever there. Miss Hankin Hardy is in charge of a hospital at Kragnevatz, where she has 600 patients with only one Serbian lady doctor, no nurses, and four Austrian prisoners as orderlies. The death from typhus fever of Dr. Elizabeth McB. Ross, of the Scottish Hospital at this place, was recorded in our issue of March 20th. The American Red Cross has a hospital at Belgrade under Dr. Ryan and one at Gevgelija, the chief of which, Dr. Donnelly, died there from typhus fever, with two of the nurses. About 100 French doctors are said to be *en route* to Serbia to assist in stamping out typhus, and we learn that 25 officers of the Royal Army Medical Corps, under Colonel Hunter, have recently arrived in Serbia for duty. The hospital accommodation, where it exists, is of the most meagre and is filled to overflowing, and there appears to be none at all save in the most important towns, so that the patients lie out, often untended, in the streets. Stores also are deficient, not only drugs and dressings, but bedding, clothing, and all the necessary equipment for satisfactory hospital work. Typhus fever, owing to poverty, the impossibility of isolation, and overcrowding, is occurring in tens of thousands of cases, and it is to be feared, unless adequate preventive measures can be initiated, that with the advent of the warm weather cholera may succeed it. Not only on the score of humanity and present international ties through a common cause should every assistance in personnel and material be given to our courageous little ally, but even on the ground of self-interest, having in view the method by which migration of troops spreads disease, it is highly important that we should come to their aid.

Among the passengers on the Admiralty ship *Saidish*, which leaves immediately for Salonica, will be the advance guard of a hospital unit, sent by the Wounded Allies Relief Committee, Sardinia House, Kingsway, W.C. This advance guard will consist of two doctors and two nurses, armed with medical stores. Both the doctors are Belgians who have seen service in the war, while one of the nurses is a Russian lady, who is acquainted with the Serbian language and who has been doing valuable work at the Ambulance Jeanne D'Arc at Calais. The work of these forerunners will be to prepare the building provided by the Serbian Government, so that on the arrival of the rest of the unit work will begin at once.

The committee of the Wounded Allies Relief Fund asks for subscriptions towards this work, and any such will be welcomed by the honorary treasurers, the Hon. Mrs. Fredk. Guest, 26, Park-lane, W., and Mr. T. O. Roberts, manager, London County and Westminster Bank, 217, Strand, W.C. The Fund will shortly open a temporary resting-place for homeless Belgian soldiers in premises which have been lent them for the purpose.

Vacancies for Medical Officers.—We are asked to state that a vacancy exists for a Surgeon Lieutenant (Attached) to Kent (F.) Royal Engineers, to replace medical officer detailed to take charge of an ambulance train (railway). The appointment could be for the period of the war or otherwise. The headquarters, the station of the surgeon, are near Chatham. Correspondence should be addressed to Major H. F. Stephens, O.C., K.(F.)R.E. Head Quarters, Pier-road, Gillingham.—There are vacancies for two medical officers in the 2nd Line Welsh Border Mounted Brigade Field Ambulance. Pay and allowances as in the Regular Army, also a grant for outfit and camp kit. Further particulars can be obtained on application to Major D. C. Leyland Orton, R.A.M.C (officer commanding), Thomas-street, Chester.—Two medical officers are required at once for the 1st North Midland Field Ambulance. Applications should be sent to the Officer Commanding, R.A.M.C. Depôt, 91, Siddals-road, Derby.

Russian Medical Students Specialising for the War.—A correspondent informs us that, in view of the urgency for increasing the medical service, both for the army and for civil life, it is found to be necessary to interrupt the regular studies of medical students and in all universities to give them special courses in military field surgery and attention to the wounded; in the knowledge of internal complaints common in war; in military field hygiene; and in dealing with epidemics. These studies are to continue till May. The regulation examinations will be delayed so that the students may give undivided attention to these special studies.

The Duchess of Connaught Hospital.—Among the many benefits to the wounded, for which this country is partly indebted to the Canadian Red Cross Society, is the hospital at Cliveden, Taplow, constructed in the covered tennis-courts at Cliveden generously given by Major and Mrs. Waldorf Astor. Early in the autumn the owners of Cliveden placed these courts at the disposal of the Canadian Red Cross Society, who have now equipped the hospital, which has 100 beds, and have supplied a staff of medical officers, nurses, and orderlies, undertaking at the same time to defray the working expenses. All the beds are now occupied by wounded British and Canadian troops. The staff consists of Lieutenant-Colonel Charles Gorrell, of the Canadian Army Medical Corps, the officer commanding, with 10 other medical officers and 20 nurses, besides orderlies, of whom 32 are medical men and 1 a dentist. The situation of the building on the heights above the Cliveden woods is admirably airy, and, the courts being covered in by a glass roof, the whole building is very light. The hospital is fully equipped with an X ray room, laboratory, and offices, and it is intended by the Canadian Red Cross Society to make provision for as many as 500 beds, enlarging the staff proportionally.

Queen Alexandra's Hospital for Officers, Highgate.—A hospital for officers was opened last week in Millfield-lane, Highgate. It adjoins Brookfield House, which affords quarters for the staff. The hospital is composed of specially constructed temporary wooden huts, affording a separate room for each of 20 patients, and has an operating theatre, X ray room, &c. The patients' rooms open on to a balcony, so that they can be wheeled out into the air. The construction cost £5000, the plans having been given free by the architect, Mr. C. W. Ferrier. The cost of upkeep will amount to about £700 a month, of which Sir Alfred Mond, who also contributed £3000 towards the cost of building, has guaranteed £200.

Russian Enterprise: Circulating Country Houses.—The Governor of the Kieff district, we learn from a correspondent, is organising a system of circulating country houses along the Dnieper river zone for sick and wounded soldiers. For a beginning about 70 barges will be equipped, with comfortable quarters for invalids, and suitable medical supplies for them and the staff. The barges will be towed by steamers to the most suitable spots on the course of the river or of its navigable tributaries, there to remain for the periods of time judged expedient.

Australia and the Shortage of Doctors.—On the request of the War Office about 100 Australian medical men left Melbourne for England on March 22nd, and will soon be followed by a complete hospital unit.

Sir Lambert H. Ormsby, senior surgeon to the Meath Hospital and County Dublin Infirmary, past-President of the Royal College of Surgeons in Ireland, late examiner in surgery appointed by the War Office for R.A.M.C. examinations, has been appointed honorary consulting surgeon to the New Zealand Expeditionary Force, with the rank of Lieutenant-Colonel. Sir Lambert Ormsby is a New Zealander by birth, although of Irish parents.

Travel in France.—It is interesting to note that the temporary disorganisation of railway travel in France that resulted from the outbreak of war has now been overcome, at any rate, so far as the route to the South is concerned. The P.L.M. night express between Paris, Marseilles, and the Riviera has resumed its former route and gained three hours on the whole journey. Carriages branch off at Tarascon to serve the Nismes–Montpellier–Cette district; a new night express runs between Paris and Lyons (*viâ*

Dijon), and the day express time is shortened by two hours; while extensions to Geneva and to Grenoble, Modane, Turin, and Rome of the Paris-Lyons service facilitate communication with Switzerland and Italy. These changes came into operation on March 23rd.

A New Red Cross Hospital for Honiton (Devon).—At Honiton last week the Mayor formally opened the Voluntary Aid Red Cross Hospital provided by the district. It contains two wards, with 30 beds, operating theatre, &c.

Medical News.

Victoria University of Manchester.—At examinations held recently the following candidates were successful:—

Third M.B. and Ch.B. Examination.

E. R. Gilmore, J. B. Leigh, and B. L. Lloyd.

Second M.B. Examination.

Frances G. Bullough, James Charnley, R. S. Paterson, and H. T. Savage.

Diploma in Public Health.

T. F. Bamford, A. G. Bryce, D. I. Dakeyne, H. H. Proudfoot, and D. M. Wilson.

Diploma in Dentistry (Third Examination).

W. K. Lever and Herant Papazian.

Diploma in Dentistry (Second Examination).

Dental Metallurgy.—B. C. Betts, Roland Critchley, John Green, James Kershaw, H. A. Parkinson, George Stirling, A. C. Tattersall, and C. H. Travis.

Dental Mechanics.—B. C. Betts and James Kershaw.

Dublin University School of Physic, Trinity College.—At the recent Hilary examinations the following candidates were successful:—

Preliminary Scientific Examination.

Chemistry and Physics.—Patrick Casey and Athanas Blagoff.

Botany and Zoology.—William Swirles Allardyce.

Intermediate Medical Examination.

Part I., Anatomy and Institutes of Medicine (Physiology).—Patrick Bernard Moloney, Thomas Scannel McDonald, Herbert James Wright, Thomas Edward Hill, Thomas Mulock Bentley, Wilfred Vincent Pellissier, Arthur Isaac Steyn, Harry Banks, William Andrew Byrn, Fleetwood William Porter Sullivan, Meta Grace Jackson, William Joseph Hamilton, and John Edmund Hill.

Part II., Applied Anatomy and Applied Physiology.—William Robert Fearon, Edward D'Arcy McCrea, Stanley Cyril Mitchell, Andrew Hope Davidson, Alexander Richard Barlas, Edward Oswald Marks, George William Bernard Shaw, Willem Petrus Lubbe, Henry James Rice, Alan Glynn Wright, Frederick Joseph Smith, Joseph Roland Brennan, Bryan Austin McSwiney, Michiel Dippenaar, Rita Henry, Patrick Rocks, Robert Wallace Nesbitt, Charles Perceval Chambers, William James McClintock. Hirsh Brill, Philip Hall, Joseph Godfrey Bird, Eileen Gertrude Gwynn, and Marie Annette Hadden.

Final Examination.

Part I., Materia Medica, Medical Jurisprudence, and Hygiene and Pathology.—Charles Owen James Young, Arthur Hubert Watson, Frederick John Murphy, Clotilda Bayne Bevis, William Lionel Bates, John Thorp Westby, Edward Lipman, Roland Harris Graham, Edward Parker and John James Keatley (Materia Medica and Pathology), Henry Stephen Campion (Medical Jurisprudence and Hygiene and Materia Medica), Rupert Montgomery Gordon, John Armstrong Crozier Kidd, Thomas Edward Beatty and William Hunt (Materia Medica, completing examination), and Thomas Galvin Roche and Grosvenor Leyburne Murphy (Pathology, completing examination).

Part II., Surgery.—John Speares, Herbert McWilliam Daniel, Eugene John McSwiney, Arthur Cyril Bateman, James Salmond Robinson, Andrew William Palethorpe Todd, George Stanton, Edward Mannix, Francis Albert L'Estrange, Clara Beatrice Marguerite Adderley, William Blacker Cathcart, Henry Ireland Gascoyne Rutherford, and Kathleen Dorothea Wallace.

Part II., Medicine.—Joseph Victor Cope, John Speares, Francis Sidney Mitchell, John Milo Ryan, Arthur Cyril Bateman, Isaac Whitla Corkey, William Blacker Cathcart, William Fothergill Wilson, Hilda Varian, Norman McConnell Boyce, Edmond Robinson, William McElrea Snodgrass, Geraldine Murphy, Edwin Boyers, James Salmond Robinson, Joseph Henry Cranston Walker, and Christopher Charles Albertyn.

Part II., Midwifery.—William Fothergill Wilson, George William Doran, Frederick Rowland Studdert Shaw, Thomas Stanton, Godfrey Bateman, William James Dowling, Evelyn Ross, Thomas Edward Bellingham Beatty, George Oliver Fairthough Alley, Edward Gordon Fishe, Arthur George Fisher, Grosvenor Leyburne Murphy, William Benjamin Walker, Richard William Acheson, and Cecil Francis Brady.

Intermediate Dental Examination.

Anatomy and Physiology.—John Henry James Stuart and Henry Erasmus Flavelle.

Final Dental Examination (B. Dent. Sc.).

Hugh Theodore Alexander McKeag.

Diploma in Public Health, First Examination.

Walter Crane and Edward Harnett Patrick Murphy.

Experimental Physics.—Frederick William Robertson, James Sinclair Quin, Joseph Cecil Gillespie, John Gerard Holmes, Richard Counihan, Thomas Madill, Richard William Shaw, Ivan Wakefield Beatty, John Henry Brunell Crosbie, Patrick Joseph Duggan, Cecil Emrys McQuade, John Charles Joseph Callanan, William Joseph Orr, Derrick Haughton Gardiner Fishbourne, Richard Wood Power, Johannes Tobias Mynhardt, Cecil Joseph Quinlan, Gerald Fitzmaurice Keatinge, Henry Allman Lavelle, William Joseph Hogan, Richard Dominick Murphy, Albert Hugh Thompson, William Swirles Allardyce, John Cecil St. George Earl, Gertrude Rice, Read Abgar Aidin, Herbert Birney, Leo Vincent Clifford, John Henry Coolican, Albert Victor Foster, Becker Fitzjames Haythornthwaite, Noelle Long, Edward Henry Montgomery, George Francis Thomas Saunders, John Farneworth Sheppard, Jacobus Frederik Van Staden, and Thomas James Russell Warren.

University of Durham Faculty of Medicine.—At examinations held recently the following candidates were successful:—

First Examination for the Degree of Bachelor of Medicine.

Samuel Eric Hill Anderson, John Maurice Brydson (second-class honours), Sujan Raj Chatterji, Iris Marjorie Cheeseright, Eskander Girgis, Ibrahim Girgis, Mary Isabel Alleyne Grimmer, Gabriel Jonas Dowuona Hammond, Reginald Arthur Hickley, Donald Falconer Hocken, James Richard Hughes (second-class hononrs), Louis Lavine, David Levinstein, Ahmed Saleh, Hans Wilhelm Walther, and George Roebuck Woodhead.

Third Examination for the Degree of Bachelor of Medicine.

Materia Medica, Pharmacology, and Pharmacy; Public Health; Medical Jurisprudence; Pathology and Elementary Bacteriology.—Norman Alexander Martin, George Nathaniel Metzger, and Alfred Smirthwaite.

Death of Mr. Francis Arthur Knox Stuart, B.A., L.S.A. Lond.—A promising career was prematurely ended by the untimely and tragic death on March 9th of Mr. Francis Arthur Knox Stuart at a Chichester nursing home, whither he was removed following a serious motor accident. While riding a motor-cycle, to which a side-car was attached, on the Chichester—Arundel road on Feb. 23rd he accidentally collided with a motor-car belonging to an Arundel medical man and sustained a compound fracture of the right leg. He never recovered from the shock; the limb was amputated, and death occurred on March 9th. Born on Sept. 27th, 1875, Mr. Stuart studied at Cambridge, where he took the B.A. degree, and at St. Mary's Hospital, London, becoming L.S.A. Lond. in 1907. At Cambridge he won distinction as a cycle-track rider and gained many trophies, while he was also an enthusiastic golfer. At the time of his death he was the senior medical officer of the West Sussex Mental Hospital at Graylingwell, Chichester. Those associated with Mr. Stuart at the hospital express profound sorrow at the untimely end of one who was held in the highest esteem in the cathedral city and district. The funeral took place at Chichester on March 12th, a service in the chapel on the hospital estate preceding the interment.

Resignation of Dr. R. A. Birdwood.—Dr. Birdwood, who has just retired from the post of medical superintendent of the Park Hospital, Hither Green, after 37 years' service under the Metropolitan Asylums Board, has been responsible for many reforms in the working of the service. He carried out the scheme by which small-pox patients were taken direct from their homes to ships moored down the river, and he initiated diet scales which have resulted not only in a lessened mortality, but also in a decrease of expenditure. His views were not always supported in the beginning, but experience proved to be on his side.

Liverpool Reformatory for Girls.—Owing to an outbreak of infectious disease among the inmates of this institution the Home Secretary has certified that the premises at 36, Carlton-road, Tranmere, Birkenhead, are fit to afford temporary accommodation, six months from the date of the certificate, March 3rd, for not more than 90 girls of the reformatory.

Society for the Study of Inebriety.—The annual meeting will be held in the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W., on April 13th, at 4 p.m. Dr. H. Crichton Miller will open a discussion on Dual Personality and Intemperance. Each member and associate is at liberty to introduce a visitor.

Dr. Philippe Briffaux, of the University of Louvain, has been appointed house surgeon at the Dover Royal Victoria Hospital.

We regret to announce the death of Mr. Bernard Roth, F.R.C.S., which took place on March 29th.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Harris, John Henry, M.D. Durh., M.R.C.S., L.S.A., D.P.H. Cantab., Major, R.A.M.C. (T.), has been appointed Specialist in Surgery to the 4th Wessex Brigade, R.F.A., whilst temporarily stationed in India.

McDade, C. E., M.D. R.U.I., has been appointed Medical Officer of Health for the Borough of Battersea during the absence of Dr. G. Q. Lennane.

Oates, G. E., M.D. Lond., D.P.H. Cantab., has been appointed Medical Officer of Health for Ilford.

Scott, W. Macargur, L.A.H. Irel., L.M., L.P.S., has been appointed Medical Officer for the West Division of Liverpool.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Barrow-in-Furness, North Lonsdale Hospital.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

Bath, Royal United Hospital.—Resident Medical Officer.

Birkenhead Borough Hospital.—Senior House Surgeon. Salary £120 per annum, with board and laundry. Also Junior House Surgeon. Salary £100 per annum, with board and laundry.

Birmingham General Dispensary.—Resident Medical Officer, unmarried. Salary £250 per annum, with apartments, attendance, &c.

Birmingham and Midland Hospital for Skin and Urinary Diseases.—Clinical Assistant for three months. Salary at rate of 52 guineas per annum.

Birmingham, Romsley Hill Sanatorium for Consumptives.—Assistant Resident Medical Officer, unmarried. Salary £250 per annum, with board, apartments, and laundry.

Birmingham, Yardley Road Sanatorium and the Anti-Tuberculosis Centre.—Third Assistant Medical Officer. Salary £200 per annum, with board and residence.

Bootle Borough Hospital.—Senior and Junior House Surgeons, Salary £150 and £130 per annum respectively, with residence. board, and laundry.

Bournemouth, Royal Victoria and West Hants Hospital.—Three House Surgeons for six months. Salary £100 per annum, with board, lodging, and washing.

Breconshire County Council.—Temporary Assistant School Medical Officer. Salary at rate of £300 per annum.

Bridgwater Hospital.—House Surgeon, unmarried. Salary at rate of £125 per annum, with board, lodging, and washing.

Bristol Education Committee.—Female Assistant School Medical Officer. Salary £300 per annum.

Bristol Royal Infirmary.—Three House Surgeons. Two House Physicians, and One Obstetric and Ophthalmic House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.

Burnley County Borough.—Temporary Assistant Medical Officer of Health. Salary at rate of £400 per annum.

Bury Infirmary.—Senior House Surgeon and Junior House Surgeon. Salary £175 and £150 per annum respectively, with board, residence, and washing.

Canterbury, Chartham Asylum.—Locum Tenens Assistant Medical Officer. Salary £7 7*s.* per week, with board, lodging, and washing.

Canterbury Mental Hospital.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, lodging, washing, and attendance.

Chesterfield and North Derbyshire Hospital.—Second House Surgeon Salary £150 per annum, with board, apartments, and laundry.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—Tuberculosis Officer. Salary at rate of £400 per annum, with lunch and dinner. Also Gentleman to supply the place of Members of the Out-patient Staff of Physicians who are on service in H.M. Forces.

Croydon Borough Hospital.—Assistant Resident Medical Officer. Salary £150 per annum, with board, residence and laundry.

Derby, Derbyshire Hospital for Sick Children.—Female Resident Medical Officer for six months. Salary £200 per annum.

Dudley, Guest Hospital.—Senior Resident Medical Officer. Also Assistant House Surgeon for six months. Salary £150 and £120 per annum respectively, with board, residence, attendance, and washing.

Dumfries, Crichton Royal.—Temporary Assistant Physician, unmarried. Salary at rate of 5 guineas a week, with apartments, board, laundry, and attendance.

Edinburgh, Royal Edinburgh Asylum, Morningside.—Assistant Medical Officer. Salary £175 per annum, with board, rooms, &c.

Halifax Royal Infirmary.—Second and Third House Surgeons, unmarried. Salary £120 and £100 per annum respectively, with residence, board, and washing.

Hampshire County Council.—Assistant County Medical Officer of Health. Salary £300.

Hull, Victoria Children's Hospital, Park-street.—Resident House Surgeon and Resident Assistant House Surgeon. Salary £60 and £50 per annum respectively, with board and laundry. Also Resident House Surgeon. Salary £100 per annum, with board and laundry.

Kensington Dispensary and Children's Hospital.—Resident Medical Officer. Salary £100 per annum, with board, apartments, and washing.

Kent County Council.—Tuberculosis Officer. Salary at rate of £500 per annum.

Lancashire County Council, Elswick Sanatorium, near Kirkham.—Medical Superintendent. Salary £300 per annum, with board, apartments, and washing.

Liverpool, Township of Toxteth Park.—District Medical Officer and Public Vaccinator for No. 1 District of the Township. Salary £500 per annum.

London Lock Hospital, Harrow-road, W.—House Surgeon for six months. Salary at rate of £130 per annum, with rooms, full board, and washing.

Luton, Borough of.—Acting Medical Officer of Health. Salary at rate of £500 per annum.

Macclesfield, Cheshire County Asylum, Parkside.—Second Assistant Medical Officer. Salary £300 per annum, with rooms, board, washing, &c.

Maidstone, Kent County Asylum.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, quarters, attendance, washing, &c.

Manchester Children's Hospital, Gartside-street.—Assistant Medical Officer for Out-patient Department for six months. Salary £100 per annum.

Manchester Children's Hospital, Pendlebury.—Resident Medical Officer, unmarried, for six months. Salary at rate of £100 per annum.

Manchester, County Asylum, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

Manchester Hospital for Consumption and Diseases of the Throat and Chest.—Assistant Medical Officer and Pathologist. Salary £60 per annum.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Middlesbrough, North Ormesby Hospital.—House Surgeon. Salary £150 per annum, with board, washing, and attendance.

Mile End Old Town Infirmary.—Two Assistant Medical Officers. Salary £275 per annum, with board, lodging, and washing.

Miller General Hospital for South-East London, Greenwich-road, S.E.—Senior House Surgeon for six months. Salary £100 per annum, with board, residence, and laundry.

Newport (Mon.), Royal Gwent Hospital.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry.

Northampton County Borough Education Committee.—Dental Surgeon. Salary £250 per annum.

Northampton General Hospital.—House Surgeon. Salary £120 per annum, with apartments, board, washing, attendance, &c.

Norwich, Jenny Lind Hospital for Sick Children.—Female Resident Medical Officer for six months. Salary £150 per annum, with board, apartments, and laundry.

Notts Education Committee.—Female Assistant School Medical Officer. Salary £300 per annum.

Oldham Royal Infirmary.—Surgeon to Ear, Nose, and Throat Department. Salary £50 per annum.

Paddington Green Children's Hospital.—Female House Physician for six months. Salary at rate of £80 per annum, with board, residence, and washing.

Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—House Physician and House Surgeon for six months. Salary £100 per annum, with board, residence, and washing.

Royal Hospital for Diseases of the Chest, City-road, E.C.—House Physician for six months. Salary at rate of £75 per annum, with board, lodging, and washing. Also Tuberculosis Officer. Salary £420 per annum.

Royal National Orthopædic Hospital, 234, Great Portland-street, W.—Resident House Surgeon. Salary £100 per annum, all found.

Royal Waterloo Hospital for Children and Women, S.E.—Senior and Junior Resident Medical Officers. Salary at rate of £150 and £100 per annum respectively, with board and washing.

St. Mary's Hospital for Women and Children, Plaistow, E.—Junior Resident Medical Officer for three months. Salary at rate of £90 per annum, with board, residence, and laundry.

Salford Royal Hospital.—Junior House Surgeon and Casualty House Surgeon for six months. Salary at rate of £100 per annum each, with board and residence.

Salisbury General Infirmary.—House Surgeon and Assistant House Surgeon, unmarried. Salary £100 and £75 per annum respectively, with apartments, board, lodging, and washing.

Salvation Army Mother's Hospital, Clapton, N.E.—Female Resident Medical Officer.

Scarborough Hospital and Dispensary.—Senior and Junior House Surgeons. Salary £100 and £80 per annum respectively, with board, residence, &c.

Sheffield City Hospitals.—Infectious Diseases and Tuberculosis Medical Officer. Salary £250 per annum, with board, lodging, and washing.

Sheffield Royal Hospital.—Assistant House Surgeon and Assistant House Physician.

Sheffield Royal Infirmary.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence. Also Assistant House Surgeon and Assistant House Physician.

Sheffield University.—Joseph Hunter Chair of Pathology.

Shoreditch Infirmary, Hoxton-street, N.—Senior Assistant Medical Officer. Salary £280 per annum, with board, apartments, and washing.

Shrewsbury, Royal Salop Infirmary.—House Physician. Salary at rate of £110 per annum, with board and apartments.

South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

South Shields Union.—Medical Officer of Harton Institution, Infirmary, and Cottage Homes at Cleadon. Salary £350 per annum, with rations, apartments, and attendance. Also Assistant Medical Officer. Salary £250 per annum, with rations, apartments, attendance, and laundry.

Stockport Union, Stepping Hill Hospital.—Resident Assistant Medical Officer. Salary £250 per annum, with apartments, rations,

Stoke-on-Ttent County Borough.—Female Medical Officer. Salary £300 per annum.

Taunton and Somerset Hospital, Taunton.—Senior House Surgeon. Salary £120 per annum, with board, lodging, and laundry.

Ventnor, Isle of Wight, Royal National Hospital for Consumption and Diseases of the Chest on the Separate Principle.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with board and lodging.

Wakefield, Clayton Hospital—Female Junior House Surgeon. Salary £120 per annum, all found.

Warrington Infirmary and Dispensary.—Junior House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.

West End Hospital for Diseases of the Nervous System, Paralysis, and Epilepsy, 73, Welbeck-street, W.—Honorary Registrar. Also Clinical Assistants to Out-patients' Physicians.

West Ham and Eastern General Hospital, Stratford, E.—Junior House Surgeon. Salary at rate of £100 per annum, with board, residence, and washing.

West Riding of Yorkshire.—Temporary Dispensary Tuberculosis Officer. Salary £400 per annum.

Weston-super-Mare Hospital.—House Surgeon. Salary £120 per annum, with board, residence, and laundry.

Births, Marriages, and Deaths.

BIRTHS.

Evans.—On March 23rd, at Fairfield Mount, Chesterfield, the wife of Thomas R. Evans, M.D., of a daughter.

Suckling.—On March 28th, at 5, Marine Terrace, Margate, the wife of John Jerome Suckling, M.B., B.S. Lond., of a son.

Swan.—On March 26th, at Wimpole-street, the wife of R. H. Jocelyn Swan, M.S. Lond., F.R.C.S. Eng., of a son.

Whitney.—On March 27th, at High View, Maldon, Essex, the wife C. Underwood Whitney, L.R.C.P., M.R.C.S., of a daughter.

MARRIAGES.

Martin—Hunt.—On March 22nd, in Scotland, Gerald Noel Martin, Surgeon, R.N., to Agnes Margaret, third daughter of the Rev. R. G. Hunt, vicar of St. Mark's, Wolverhampton.

Tylecote—Boddan.—On March 27th, at St. James's Church, Birkdale, Frank Edward Tylecote, M.D., D.P.H. Vict., M.R.C.P. Lond., Captain, R.A.M.C. (T.), to Charlotte Dora, only daughter of Mr. and Mrs. Boddan, of Hutton Dene, Heaton Mersey, and York-road, Birkdale.

DEATHS.

Macfie.—On March 26th, at his residence, St. George's-road, Bolton, Charles Macfie, M.D., aged 65 years.

McKerrow.—On March 23rd, George McKerrow, M.B., C.M., at Barns-street, Ayr, aged 65 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

BOOKS, ETC., RECEIVED.

Allen, George, and Unwin, London.
Is it to be Hate? An Essay in War-Time. By Harold Picton. With a Foreword by J. A. Hobson. Price 3*d.* net.

Arnold, Edward, London.
A Practical Handbook of Surgical After-Treatment. By Allan H. Todd, B.Sc., M.S. Lond., F.R.C.S. Eng. Price 4*s.* 6*d.* net.
An Introduction to School Hygiene. By W. B. Drummond, M.B., C.M., F.R.C.P. Edin. Price 3*s.* 6*d.*
A Surgeon in Belgium. By H. S. Souttar, F.R.C.S., Assistant Surgeon, West London Hospital. Price 8*s.* 6*d.* net.

Baillière, et Fils, Paris; **Constant Tarin**, Lausanne.
La Cure de Soleil. By Dr. A. Rollier. Price 20 francs.

Bibby, J., and Sons, Liverpool.
Bibby's Book on Milk. Section II. Fourth edition. Price 4*s.* net.

Black, A. and C., London.
Radiography, X ray Therapeutics, and Radium Therapy. By Robert Knox, M.D. Edin., M.R.C.S. Eng., L.R.C.P. Lond., Honorary Radiographer, King's College Hospital; Captain, R.A.M.C. (T.), 4th London General Hospital (in Charge of X Ray Department). Price 25*s.* net.

Daniel, C. W., London.
Key to Health and Long Life. By F. W. Mitchell, I.S.O. Price 3*s.* 6*d.* net.

Garden City Press, Letchworth.
British Guiana Medical Annual for 1913. Edited by K. S Wise, M.B., B S., B.Sc. Lond., D.P.H., M.R.C.S. Eng., L.R.C.P. Lond, Price 5*s.*

Griffin, Charles, and Co., Limited, London.
Handbook of Medical Jurisprudence and Toxicology for Use of Students and Practitioners. By W. A. Brend, M.A. Cantab., M.B., B.Sc. Lond., Barrister-at-Law. Second edition. Price 8*s.* 6*d.*
Introduction to Midwifery, a Handbook for Medical Students and Midwives. By Archibald Donald, M.A., M.D., C.M. Edin., M.R.C.P. Lond. Seventh edition. Price 6*s.*

Methuen and Co., Limited, London.
Throat and Ear Troubles. By Macleod Yearsley, F.R.C.S. Price 1*s.* net.

Year Book Press, London.
The Public Schools Year Book, 1915. Edited by H. F. W. Deane, M.A., F.S.A., and W. A. Evans, M.A. Price 5*s.* net.

Notes, Short Comments, and Answers to Correspondents.

HEALTH OF UGANDA.

Sir F. J. Jackson, G.C.M.G., C.B., Governor of Uganda, has forwarded to the Colonial Office for presentation to Parliament a report on the Blue-book of that Protectorate for the year 1913–14. The report states that the population in March, 1914, was estimated at 2,909,122, including 1017 Europeans, (761 males and 256 females) and 3651 Asiatics. Amongst Europeans in 1913 there were 4 marriages, 25 births, and 9 deaths. The health of European officials was, on the whole, satisfactory. The average number resident during the year was 289, amongst whom there were 485 cases of illness and no deaths, as compared with 395 cases and 5 deaths during 1912. Of the admissions to hospital 155 were due to malaria, 4 to blackwater fever, and 101 to digestive diseases. The number of officers invalided since 1906 (inclusive) has been 32, the principal causes of invaliding being nervous and mental diseases (9 cases), blackwater fever (5 cases), circulatory affections (5 cases), and general debility (6 cases). A large number of cases of illness amongst the general European population are treated at the central hospital of the Church Missionary Society at Mamirembe, and statistics relating to these are not available. At Government Hospitals there were 953 cases treated, the principal disease being malaria (325 cases) and digestive diseases (196 cases). The special report on blackwater fever, which relates to all hospitals, shows 19 cases with 2 deaths, as against 9 cases and 3 deaths in 1912. The number of blackwater fever cases has increased during the last five years, but this is believed to be due entirely to the rapid increase in the susceptible population, which has outstripped the suitable housing accommodation. It was noticed that amongst Government officials, who, as a body, are comparatively better situated as regards housing, mosquito protection, and general condition of living, there was no increase of incidence and the death-rate was lower.

Returns of births and deaths amongst natives are not obtainable, but in certain districts approximate figures are supplied by the native chiefs. In the districts concerned these show a birth-rate of 24·93 per 1000 and a death-rate of 22·41. The highest birth-rate (44·6) occurs in Busoga district and the lowest (12·87) in Buganda district. The diseases which call for special attention in the native population are plague, sleeping sickness, tick fever, and leprosy. Plague prevails mainly in the Eastern province, though it occurs also in Buganda and in the districts west of the Nile. The number of deaths from this cause was 3734 in 1911, 3100 in 1912, and 3292 in 1913. Of the latter total 2154 occurred in the Eastern Province. There is no doubt that the disease has spread further afield in this Province, more particularly in the districts north of Lake Kioga. It is probable that the establishment of the cotton industry, which is instrumental in bringing very large numbers of natives together at the cotton markets, has been partly responsible for this. Moreover, it is believed that seed cotton is very well adapted to the harbouring of plague fleas, though there is some difference of opinion on this point. Preventive measures adopted are inoculation of contacts and of the population in epidemic areas with Haffkine's serum and the destruction of rats, for which a small reward is offered. The movement of seed cotton is also regulated to minimise, as far as possible, the danger from this source, and the erection of cotton ginneries in the thickly populated areas within the limits of townships is not now permitted. During 1913 there was no very serious local epidemic, but at the time of writing the report the disease had appeared in epidemic form in the port of Jinja. The population to be dealt with is spread over a very wide area and consists mainly of somewhat "raw" tribes, amongst whom it is extremely difficult to ensure that even the most elementary precautions will be taken upon the appearance of an outbreak. To combat this difficulty native "inspectors" have been appointed whose duty it is to report immediately the appearance of suspicious cases and to educate the village chiefs in the precautionary measures which can be taken by them.

The decrease in the number of cases of sleeping sickness continues, and is believed to be general, though it is less marked in Busoga and in the districts surrounding Lakes George and Edward. The deaths attributed to this disease in combined native and official returns numbered 708 in 1913, as compared with 932 in 1912. In 1905 the deaths in the Buganda province alone numbered 8003. Although the spread of this disease has been kept in check, this is entirely due to preventive measures, and the conditions favouring its transmission are still in existence. During the year Miss M. Robertson, protozoologist, reported the presence in the Bunyoro district of a trypanosome not previously observed, resembling morphologically the T. rhodesiense, which is responsible for this disease in Rhodesia and Nyasaland. It is important to ascertain whether this trypanosome is, or is likely to become, pathogenic to man, and investigations on this point are now proceeding. So far the balance of evidence is against the conclusion that this or any other form of trypanosome infecting cattle or game in this area is a new introduction, and there is no evidence that any human being has been infected with this trypanosome.

The number of admissions to hospital on account of spirillum fever has decreased, and it is hoped that the improvement may be maintained. The disease is transmitted by a tick which finds its habitat in mud walls and in old grass huts. It is therefore especially common at wayside camps and markets where carriers gather in considerable numbers. The increase in mechanical transport has, no doubt, been partly responsible for the decrease. European travellers, by the exercise of a little care, can usually avoid contracting this disease. An attempt was made to arrange for the segregation of lepers in special settlements under the supervision of the local chiefs, but this has not proved satisfactory, and the experiment of segregating them in their own villages is now being tried. There is no reason to suppose that leprosy is on the increase. Several local outbreaks of small-pox occurred, but there was no serious epidemic. The deaths from this cause numbered 637 in 1910, 1044 in 1911, 519 in 1912, and 337 in 1913. The number of vaccinations in 1913 was 4535. The best results were obtained with local lymph made in Nairobi.

The laying out of townships and the type of building permissible have formed the special object of the sanitary authorities' attention. The general policy adopted is the reservation of a zone of 300 yards between the business and residential quarters and of a further zone of 300 yards between the European and Asiatic quarters. In new townships this is a fairly simple matter, but there is great difficulty in applying the scheme to townships where long leases have been granted and permanent buildings erected. Anti-malarial gangs are now employed at all the principal stations, who visit all compounds in search of empty tins and other receptacles likely to contain larvæ and examine gutters and water barrels and report the existence of breeding places of mosquitoes. Much improvement has also been effected by the planting of short grass and removal of jungle and scrub near the stations.

The average rainfall at 37 stations for the last 10 years is given as 43·21 inches. In the year 1913 the highest rainfall was registered at Kumi, in the Teso district, and totalled 60·20 inches, distributed over 100 days, the wettest month being May, when 12·49 inches fell. The lowest rainfall was at Mbarara, which showed 20·93 inches falling on 85 days. The rainfall at Entebbe was 56·43 inches, registered in 149 days. There is great local variation from year to year and considerable difference in the rainfall at stations not many miles apart. The "rainy seasons" are by no means regular in their occurrence, but, generally speaking, heavier rains may be expected to occur between the end of March and the middle of June, and again between the beginning of September and the end of November. The highest temperature recorded during 1913 was 104° F. at Masindi in November, and the lowest 47° F. at Fort Portal in October. The mean maximum for the year at Entebbe was 79·7° and the mean minimum 62·7°.

CHEMICALS IN RUSSIA.

RUSSIA has for a number of years chiefly made fuming sulphuric acid, sulphur salts, superphosphates, potash, alum, sulphate of soda (largely used in the glass works), muriatic acid, nitric acid, and on a small scale tin salt, lead salt, nitrites, a number of earth and other colours, tartaric acid, oxalic acid, tartar emetic, and prussiate of potash. During the last 12 years Russia has also introduced the production of toluol, trinitro-toluol, nitro-benzol, benzol, liquid oxygen, carbide of calcium, lactic acid, acetone, iodides of potassium and sodium, bromides of potassium and sodium, other iodine and bromine preparations, peroxide of hydrogen, chloroform, a series of new aniline dyes, chemically pure sulphuric, muriatic, and nitric acids, sulphide of carbon, gold and platinum salts, antimony salts, and salicylic acid. The Russian chemical industry is very irregularly distributed over the country, but the chief centres are Petrograd, Moscow, Odessa, and some of the Western Provinces. Sulphur is found in the south-east (Caucasus) and the north-east (Ural). Phosphates are plentiful in the south-west, and are in great demand for manures. The Russian Department of Agriculture has allowed the importation duty free of certain chemicals to help farmers in the eradication of field pests, namely Schweinfurth green, blue copperas, bird-lime, and bisulphide of carbon. Aniline oil and salts have been produced, but the aniline dye industry has progressed very slowly. Soap and Russian soda products are much dearer than in Germany and England.

A WARNING.

Messrs. E. and S. Livingstone, of Edinburgh, inform us that they have had complaints that medical men in Kent and Surrey have been induced by a man calling himself Johnstone to order and pay for one or more volumes of a book entitled "International Medicine," or "International Clinics," which he stated was published by "Livingston and Co.," of Teviot-place, Edinburgh. Messrs. Livingstone have put the matter in the hands of the police, and write to warn medical men that they employ no canvassers and do not publish a work with such a title. The canvasser is described as tall, thin, fair, with moustache, about 45 or 50 years of age. He carried a bag containing printed pages purporting to be samples and was shabbily dressed.

INFLUENZAL LARYNGITIS; MORBILLAR BRONCHO-PNEUMONIA; VERMIN IN THE TRENCHES AND ELSEWHERE.

IT is both curious and instructive to note how old methods arrive again as novelties. A lay correspondent writing from Manchester concerning the treatment of influenzal laryngitis gives us as a result of his own personal experience that "a gargle, consisting of one drop of iodine in a wineglass of water, swallowed after gargling, three times a day, has cured the above complaint in a couple of days." A gargarisma iodi used to be contained in many hospital pharmacopœias and possibly is now. A sherry-coloured solution of tincture of iodine in water was frequently recommended, both as a dressing and as a gargle, the latter to be swallowed after gargling. One drop of the tincture is a rather small dose—two or three would perhaps be better—in a wineglassful of water, but we are quite prepared to believe that the treatment mentioned would prove of service.—Mr. R. Bazett also writes to call our attention to "an obvious line of treatment" which he has always used in measles, a disease now more or less epidemic in London and elsewhere. The method is to paint the tonsils with a mixture of 5 to 10 minims of liquid carbolic acid with the same quantity of the old tinct. iodi in half an ounce of glycerine. He has never had broncho-pneumonia supervene in a case in which this treatment has been used from the start. The treatment has had considerable advocacy already.—Finally, Mr. John Frederick Briscoe calls attention to the danger of toxic effects attendant on the resuscitated practice of powdering the clothing with mercurial salts as a preventive of vermin, not only in the trenches but anywhere. He considers sulphur preferable as being well tried and of known utility against the epizoa (THE LANCET, Feb. 20th, p. 416), useful also against rheumatism, and when mixed with grease for scabies; while for pediculi capitis the white precipitate ointment is still the best.

HEALTH AND CLIMATE OF ST. VINCENT.

THE Hon. C. Gideon Murray (Administrator), in his report for the year 1913–14, states that the population of the island of St. Vincent is now estimated at 46,605. The births during the year numbered 1766, 61·32 per cent. of which were illegitimate, and the deaths totalled 801. The causes of death were:—General diseases (including syphilis, 96; tubercle, 51; tetanus, 10; malarial fever, 1; dysentery, 11), 211; diseases of nervous system, 32; of circulatory system, 24; of respiratory system, 51; and of digestive system, 156; parasites, 20; age, 88; stillborn, 111; other diseases, 108. During the year there were 842 cases treated in the Colonial Hospital, the death-rate being 3·92 per cent. of the total cases. The medical officer is greatly assisted in his work by the presence of an efficient European nurse-matron, selected by the Colonial Nursing Association. There were 9 inmates in the leper asylum on March 31st, 1914. Under the Public Health Ordinance, 1910, provision is made for the compulsory segregation of pauper lepers. The colony's paupers are housed in the old military buildings at Fort Charlotte. They numbered at the close of the year 79. Chronic tertiary syphilis accounts for the vast majority of cases to whom this institution offers asylum for the closing stages of their life. In the towns the authorities are realising more and more the importance of stricter sanitation and are taking steps accordingly. In the villages, however, sanitary matters are still on a primitive basis, although the Government, through their district sanitary and medical officers, spare no pains to impress upon the population generally the necessity for care in this direction.

The mean monthly temperature in 1913–14 was 78·5° F., the maximum being 80·5° in September and the minimum 73·3° in January. The rainfall for the year was 88·3 in.; rain fell on 247 days, and the maximum fall in 24 hours was 3·40 in. on Oct. 24th. Except in August and September, when the atmosphere is uncomfortably hot, although not even in those months insalubrious, the climate may be regarded as most healthy for both Europeans and coloured persons. Malaria is hardly known, while yellow fever has proved itself to be a disease of the past. "St. Vincent," adds the Administrator, "is one of the beauty spots of these West Indian Islands. With its exquisite scenery, its lovely drives, rides, and walks, its healthy climate, it cannot fail at the conclusion of the great and fearful war which at present envelopes Europe to attract to its shores some of the numerous tourists who in winter seek warmth and sunshine and an escape from the colder northern climes."

R. G. P.—The Section in question of the Medical Act applies to New Brunswick, Nova Scotia, Prince Edward Island, and Quebec. Ontario has made a move which should lead to Canadian reciprocity, as the example of Ontario will probably be followed by Manitoba and Western Canada. It is an anomaly that we have not yet attained to general reciprocity with Canada, and one that has proved inconvenient in supplementing our medical service with the Expeditionary Forces.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, Society's Rooms, West London Hospital, Hammersmith-road, W.

FRIDAY.—8 P.M., Clinical Meeting. Cases will be shown by Dr. F. S. Palmer, Mr. McAdam Eccles, Dr. G. Pernet, Dr. R. Morton, Mr. O. Addison. and Dr. A Saunders.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 30th, 1915.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Mar. 24	29·91	S.	...	78	57	50	50	51	Overcast
,, 25	30·01	N.E.	0·10	54	47	46	45	46	Raining
,, 26	29·99	N.	...	63	42	34	36	37	Cloudy
,, 27	29·75	N.E.	...	87	44	30	32	33	Fine
,, 28	29·73	N.E.	...	92	41	30	31	32	Cloudy
,, 29	29·84	N.E.	...	74	41	29	31	32	Fine
,, 30	29·81	N.E.	...	43	36	31	31	33	Fine

The following magazines, journals, &c., have been received:— Public Health, British Journal of Dermatology, Parasitology, Pacific Medical Journal, Post Graduate, Albany Medical Annals, Archives of Internal Medicine, Journal of Surgery, Pediatrics, Journal of State Medicine, Birmingham Medical Review, Journal of Nervous and Mental Disease, Homœopathic Recorder, Bulletin Mensuel de la Office International d'Hygiène Publique, British Review, Annali dell' Istituto Maragliano, &c.

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An Address
ON
WOUND INFECTIONS
AND ON
SOME NEW METHODS FOR THE STUDY OF THE VARIOUS FACTORS WHICH COME INTO CONSIDERATION IN THEIR TREATMENT.

Delivered before the Royal Society of Medicine on March 30th,

By COLONEL SIR A. E. WRIGHT, M.D., F.R.S.,
A CONSULTING PHYSICIAN TO THE EXPEDITIONARY FORCE.
(*From the Research Laboratory attached to No. 13 General Hospital, Boulogne-sur-Mer.*)

THERE are a number of quite elementary problems which must be solved before we can arrive at any effective treatment of wound infections. A very brief consideration of the facts will bring us face to face with the questions to which we have to find an answer.

EVOLUTION OF WOUND INFECTIONS.

In this war practically every wound is heavily infected. The chain of cause and consequence seems to be as follows. The clothes and skin of the soldier on war service become contaminated with all manner of filth containing pathogenic organisms and spores; the projectile takes these with it, and it implants them far beyond the reach of any prophylactic applications of antiseptics.

A cultivation medium is now provided by the blood and lymph which are poured out into the track of the projectile; and we find in the wounds—I have in view here wounds examined immediately after arrival at the front—a mixed infection of a streptococcus with microbes derived from the fæces. This fæcal infection is a special outstanding feature in this war.

Among many species of intestinal microbes which have been found in wounds two have a quite special importance. One is the *gas-phlegmon bacillus*, or *Bacillus aerogenes capsulatus* of Welch—a large Gram-staining anaerobic and actively gas-forming microbe. It is found both in infiltrated superficial wounds and in deep wounds, and is particularly abundant in the frothy and offensive fæcal-looking discharges which anaerobic wounds furnish. The other is the tetanus bacillus. It is more rarely encountered, and is also much less abundant in the discharges. Sometimes, however, it may show up in every field of the microscope.

The presence of the streptococcus and these two fæcal microbes makes the first period of the wound infection—the period of imprisoned discharges—a specially critical time for the patient. During this the streptococcus may invade the tissues, and set up a cellulitis or, more rarely, erysipelas. Or the tetanus bacillus may find opportunity to grow out and manufacture its poison and induce tetanus. Or the bacillus of Welch may make its way into the body and set up a gas-phlegmon in the region round about the wound, and an obstructive gangrene in the distal portion of the limb. Or, again, the bacillus of Welch and the streptococcus may join forces, and may in conjunction produce the gas-phlegmon or cellulitis.

As soon as a free outlet has been provided, and aerobic conditions have been established in the wound, its bacterial flora changes. The ordinary pyogenic infection which has, up to this, been in abeyance, now gains the upper hand, and instead of an "*infection of the imprisoned discharges*" or, as the case may be, "*an infection of tissues*," we have now an "*infection of the granulating wound surfaces, and of the flowing discharges.*" The chief bacterial agents here at work are the streptococcus and staphylococcus, and bacillus proteus.

This pyogenic infection may, after lapse of time, subside, the wound healing up when this occurs; or the mixed infection may narrow itself down to a streptococcic infection and become chronic, the wound in this case remaining open indefinitely in the form of a discharging sinus. Or, lastly, when there is an obstructed outflow the infection may go from bad to worse, until the patient succumbs to continued suppuration and septicæmia.

SOME FUNDAMENTAL CONSIDERATIONS IN REGARD TO TREATMENT.

Those are in very brief summary the facts with regard to the evolution of wound infections, and I would venture, in passing on to discuss with you their treatment, to remind you that the ideal we ought to approximate to is the healing of the wounds by *first intention*—that is, without sensible interference by bacterial infection; and that we are so far from the attainment of that ideal that nearly all our wounded are suffering from bacterial infections; that very many are ill of these infections; and that not a few are, through these, in danger of their lives.

We have at disposal for the treatment of these wound infections three different therapeutic measures. Let me enumerate them to you in the order in which they would naturally suggest themselves to you.

First in that serial order would come *treatment by antiseptics*. After this would come what I would propose to call *treatment by physiological methods*. I mean procedures such as the opening and draining of the wound—which bring the antibacterial powers of the blood to bear on the infecting microbes. And, lastly, would come the reinforcement of the antibacterial powers of the blood—i.e., *treatment by vaccine-therapy* and similar methods. I believe it is really beyond all question that of these three the second is beyond all comparison the most important, and I would submit that, all loud talk about antiseptic treatment notwithstanding, this is at best an ancillary method of treatment. And, of course, the same applies also to treatment by vaccines.

Let me also here suggest to you another quite fundamental consideration. It is this. It will be clear that we cannot apply physiological treatment aright, nor can we apply any antiseptic or vaccine to best advantage in wound infections unless we first understand the physiological processes which go on in the wound. We do not understand these yet, even in outline.

It will therefore be necessary to address ourselves to the task of discovering what goes on in the wound and of following out its biological evolution. And the only way of doing this will be to formulate to ourselves in clear terms the questions which want answers; then—for merely looking at the wound will not help—considering how to set to work to get our answers; and, finally, taking cognisance of the results which the experimental methods which I am about to describe to you have already yielded.

No. 4780.

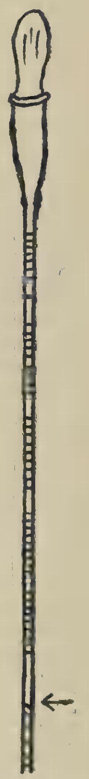
Our first question can be formulated thus:

1. *Can the microbes which are found in wound infections live and multiply in the unaltered blood fluids?*

In other words, if I take pyogenic microbes from the wound and implant these into the normal undiluted serum, will this give me a satisfactory amount of growth? If we are going to carry out this experiment, and to carry it out repeatedly, and deal with a number of different bloods; and if we are going to cultivate directly from the pus, we shall evidently have to work in capillary tubes with very minute quantities of pus and very small quantities of undiluted serum. The technique which I have arrived at for fulfilling these requirements is a very simple one. I may call that technique the *wet-wall method.*

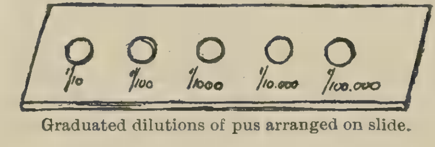
Method of Making Cultivations of Pus in Serum.

FIG. 2.



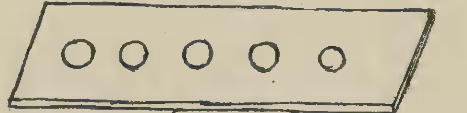
Capillary pipette filled in with five unit volumes of serum, and one unit volume of the last dilution of pus.

FIG. 1 (Slide I.).



Graduated dilutions of pus arranged on slide.

FIG. 1 (Slide II.).



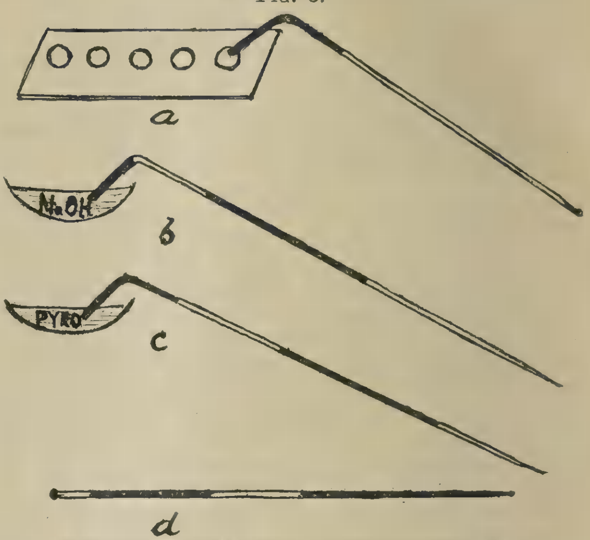
Volumes of serum implanted with the above dilutions of pus.

The first step in the procedure to make by the technique I described in my book on "Technique," a graduated series of dilutions of pus, using for this purpose any indifferent diluting fluid, and arranging the successive dilutions on a slide in the form of a series of drops. I then take in hand a clean capillary pipette fitted with a teat, make a mark upon the stem, and then draw up into it a series of unit volumes of serum, one unit volume of serum for every dilution of the pus. This done, I commence with the highest of these dilutions—that is, the one containing the smallest number of microbes—and draw it up into the stem of the pipette, stopping off exactly at the fiducial mark. I then expel this column, leaving, of course, as I do so the walls wet with a quantum of microbial suspension—a quantum which would correspond roughly to that which would be left on the outside of a platinum wire of similar stoutness dipped into the suspension. I now expel from my capillary tube my first volume of serum—this in passing over the wet wall will take up its charge of microbes—and I receive this as it issues on to a clean slide. I repeat these manipulations with the next lower dilution of pus and the next unit volume of serum, and so on, until I have implanted my series of volumes of serum with my series of bacterial dilutions. At the end I find myself with a series of drops of serum, containing graduated charges of microbes, ranged in order upon a slide, and I have in my hand a pipette which is contaminated up to the point indicated by my fiducial mark. I get rid of this contaminated segment of my capillary stem by resecting this just above the fiducial mark, and I now proceed to draw up into my pipette, separating off by bubbles of air, the whole series of drops of serum, beginning with that implanted with the fewest microbes. After sealing up the distal end of the pipette, and closing the butt end by bringing it down upon a bed of plasticine, the pipette is placed in the incubator. After an interval of 6 to 24 hours it is taken out, and the series of unit volumes are now, for purposes of microscopic examination or culture, expelled from the pipette in the order in which they have been taken up—that is, in succession from the lightest to the heaviest implanted. This is effected by cutting through the proximal end of the stem of the pipette and then the distal end, and afterwards luting the latter airtight into the truncated end of the pipette. The luting is done by rolling a little plasticine into a ball, pressing the capillary stem into this pellet as we hold it between finger and thumb, doubling over the plasticine round the stem, and then invaginating the neck of the pipette into the plastic mass. We can now with a teat expel our series of unit volumes of serum on to a slide, obtaining them in the serial order which avoids the contamination of the lighter implanted with the heavier implanted.

Method of Making Anaerobic Cultures in Capillary Tubes.

When we desire to make anaerobic serum cultures we do not employ the capillary pipette used for the original implanting operations as a receptacle for our series of serum cultures, but employ instead a separate capillary cultivation tube for each unit volume of serum. The capillary cultivation tubes here in question are made as follows: We take a portion of capillary stem, say some 8 cm. long, draw it out at one end in the flame of a by-pass into a hair-fine tube, and then break it off, leaving a certain length of throttle attached. We now introduce the other end of the capillary stem into the flame of our Bunsen, and let gravity bend it round into a syphoning curve.

FIG. 3.



Method for making anaerobic cultures in capillary tubes.

Taking one of these capillary cultivation tubes we bring down the syphon end upon our drop of serum, and let this run in, afterwards tilting the tube so as to take in, as a rear-guard, a good-sized dividing bubble of air. This done, we fill into our tube, by syphonage, from watch-glasses placed conveniently to hand, first a small quantity of pyrogallic acid, and then, without dividing off, a small quantity of caustic soda. We now further incline the tube, and let the contained fluids gravitate down towards the distal end until the serum begins to enter the throttle. At that point we arrest it by sealing the tip, and we finally also seal up the butt end, leaving the mixed pyrogallic acid and caustic soda to do their work, and absorb all the oxygen from the dividing bubble air.

Serum cultures made by this method furnish a very striking and uniform result. We obtain in the cultures implanted with the higher dilutions of the pus a pure culture of the streptococcus, and in the cultures more heavily implanted with the pus the streptococcus mixed with a certain number of other microbes; in particular, a few staphylococci and an anaerobic wisp-like diphtheroid bacillus, which often is abundant in pus, being found both intracellularly and extracellularly. All the other pyogenic microbes appear to be inhibited in undiluted normal serum, and when they put in an appearance it is only after fairly heavy sowings with pus, and comparatively late.

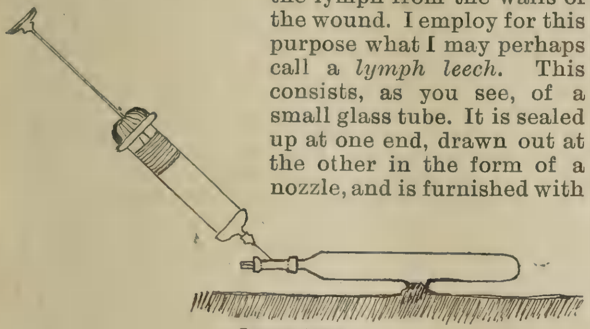
Out of these facts would come what we shall presently see to be a practically important classification of pyogenic microbes—a classification into, on the one hand, *Serophytes*, and, on the other, *Sero-saprophytes*. The serophytes would be those which, presumably because they find their foodstuffs ready made in the blood fluids, are at home there, and can in the absence of phagocytes grow and multiply there without restraint, or practically with restraint.[1] The sero-saprophytes would be those which cannot grow and multiply in the blood fluids until a change which we may, pending nearer investigation, call simply a degenerative change, has passed over those fluids.

What holds true of the blood fluids themselves might perhaps justifiably be assumed to hold true also of the lymph which pours into the wound. None the less, it will be well specially to investigate this point.

2. *Does the lymph which pours into the wound provide a favourable nutrient medium for the microbes which have been growing in that wound?*

To pose this question is already to go a long way towards getting an answer to it. For we can, by the aid of a very simple device, obtain the lymph from the walls of the wound. I employ for this purpose what I may perhaps call a *lymph leech*. This consists, as you see, of a small glass tube. It is sealed up at one end, drawn out at the other in the form of a nozzle, and is furnished with a lateral mouth with a raised rim, the whole being very easily made out of a piece of glass tubing or small test-tube. To the nozzle we fit a piece of fairly thick-walled rubber tubing, and this is blocked at the end with a piece of glass rod. When we want to obtain the exudate from a wound we bring down the lateral opening of the lymph leech upon a granulating surface, and then, transfixing the rubber tube with the needle of a hypodermic syringe, we draw out the air and make a negative pressure. It will be appreciated that the lymph leech is in principle merely a small cupping glass, and that it will, by means of the vacuum, be established in it, hold on tight for whatever period may intervene between dressing and dressing, and furnish an exudate free from all contamination with residual pus left behind in the wound. We can now proceed to compare the fluid in the cavity of the leech with the fluid in the wound outside, or, in connexion with work on antiseptics, to compare the contents of leeches applied respectively to treated and untreated surfaces in the same wound.

FIG. 4.



Lymph leech.

And lymph leeches can also be put to other uses. We can introduce for this purpose with a syringe any fluid we may select into the lymph leech, investigate the effect that fluid exercises upon transudation and emigration. Again, where the nature of a deep-lying infection of a mucous or other surface remains uncertain the application of a lymph leech might clear up the difficulty. We can also, in the case where we are testing the effect of a vaccine upon a wound, take to our aid the lymph leech. For the effect of a vaccine would probably show itself in the exudate in the cavity of the leech long before it would manifest itself in the outside wound. And, lastly, by the application of a lymph leech to the site of inoculation might perhaps help to resolve the problem as to whether or no protective substances are then developed.

But it will be realised that for us at the moment that which is of chief interest is the comparison of the fluid in the cavity of the leech with the fluid in the wound outside.

When, after washing out a heavily infected wound with an antiseptic or simple saline solution, we apply a lymph leech to the walls and then at the next dressing compare the contents of the lymph leech with the fluid outside, we think at first that there must be some mistake. Outside we have an opaque exudate presenting all the ordinary physical characters of pus, containing leucocytes in all stages of degeneration, and swarming with all manner of pyogenic organisms. Inside we have a transparent and slightly blood-stained exudate containing streptococci in practically pure culture, and in addition a few leucocytes, all of which are actively phagocytic. Except in this latter respect, we have, in fact, identically the same result as when we made our thin implantations of pus into normal serum.

The problem now stares us in the face—What is it that makes all this difference between the contents of the lymph leech and the contents of the wound? How has the lymph, which gives in the cavity of the lymph leech a culture of streptococcus, been converted in the wound outside into a fluid which is ideally favourable to the growth of a great number of different species of micro-organisms?

3. *What is the cause of that "corruption of the lymph" which converts it into a favourable nutrient medium for sero-saprophytic microbes?*

The proper way to go to work upon a problem of this kind is to keep it unremittingly before the mind. For then some hypothesis will in the end suggest itself. That found, there will invariably come to notice a certain number of accepted data which the hypothesis will fail to explain. These must then be carefully re-examined to see whether they will stand fast and discredit the hypothesis, or whether they also will come in and support it. And finally, before launching our theory, we ought to think out all its consequences, and then take each of these and verify it.

At any other time one would wish, before promulgating a far-reaching hypothesis, to have verified it at every point. But we have on our hands in Europe, I suppose, already 2 or more millions of wound infections, and every other consideration must give way to that of accelerating the researches, which we must look to to guide us in treating these infections.

I will, therefore, before completing its verification, venture to put before you what is, I believe, the solution of the problem of the corruption of the lymph in the wound.

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[1] I introduce this qualifying clause because I have on several occasions found the serum of the infected patient to give cultures of streptococcus with a planting of his pus much smaller than that which was required to give a culture in the serum of a normal man.

Let me take my departure from those facts which we were considering a moment ago, relating to the culture of pyogenic microbes in the blood fluids. You will remember that I suggested in connexion with serophytic microbes that these must find all the food materials they require ready formed in the blood fluids, and in connexion with sero-saprophytic microbes that for these no nutrient substances would be available until the albuminous substances of the blood had undergone some sort of preparatory transformation.

I conceive that that transformation could come only by a digestive process. Now, supposing this to be so, there would in the serum come into account a counteracting influence. For we have there an antifermentative, or, as we usually style it, an antitryptic element, which would directly counteract any digestive element which might be struggling to come into operation. And it is clear that microbes which were dependent for their sustenance upon the products of digestive action could establish themselves in the blood fluids only on condition that this antitryptic influence was overborne.

This hypothesis furnishes, as it seems to me, an explanation for certain striking facts relating to the cultivation of microbes on blood fluids, and to bacterial infections. It, as it seems to me, explains the finding that heavy sowings of microbes into serum are effective in giving cultures, while light sowings are not only ineffective, but lethal to the implanted microbes. For it would be only natural that the resistance offered by the antitryptic power of the blood should be overcome by the mass effect of a number of microbes operating upon a restricted or—and this would come into consideration in localised infections—a mechanically isolated quantum of blood. And, again, it would be only natural that the mass effect of a large volume of antitryptic serum could not be overcome by the digestive activities of a very few microbes; and also, I think, in accordance with what we know, that microbes deprived of access to foodstuffs should perish of inanition.

Our hypothesis would also make intelligible, in connexion with infections by sero-saprophytic microbes, that frequent and heavy sowings into the blood should be required before a septicæmia can supervene upon a local infection. And, again, our hypothesis makes it comprehensible that there should be serious difficulty in obtaining hæmocultures, even when the microbes have gained a footing in the blood stream.

And, lastly, our theory brings home to us that, in considering the defence of the body against bacterial infection, we have to take into account not only *active defence* in the form of phagocytes and bacteriotropic substances which make a direct attack upon micro-organisms, but also *passive defence*—that is, protection against infection obtained by preventing microbes converting to their uses the nutrient substances of the blood fluids.

These, however, are general considerations with applications far beyond the sphere of wound infections, and we must return to the particular problem of the corruption of the lymph in the wound.

When, after treating a wound with antiseptics and leaving it clean, we find it a very few hours afterwards teeming with microbes, we are in presence of something which, in my view, urgently stands in need of explanation. For our findings both in the lymph leech and in serum cultures made with the wet-wall method from pus would seem to teach us that the sowing of microbes left behind cannot be nearly heavy enough to produce the voluminous culture found in the wound, nor yet to account for the rapidity with which the sero-saprophytes have started to grow. And, moreover, consideration will bring out that another powerful factor must constantly come into operation in the wound. The factor in question is the tryptic ferment which is elaborated in the phagocytes, and which is, when these break up, discharged into the surrounding medium. This tryptic ferment will come into operation under two different conditions. It will come in whenever a residue of pus—for this would contain free trypsin—is left behind in or afterwards makes its way into the wound. Trypsin will again come into account whenever, after the washing of the wound, leucocytes once more begin to emigrate and phagocytose and break down.

I see in the reduction of the antitryptic power of the lymph thus effected the prime cause of its corruption. Before attempting to obtain confirmation of this from crucial experiments there was a set of findings to be cleared up. I had found in connexion with pus implantations made into serum that when this was heated to 60° C. for ten minutes one no longer obtained the same differential growth of streptococcus as with unheated serum, but obtained instead mixed cultures of streptococcus with sero-saprophytes, in particular staphylococcus and the wisp-like diphtheroid bacillus already made mention of. It seemed at first sight as if this could not possibly be related with a reduction in the antitryptic power of the serum, for it has, in view of the high quality of Opie's work on this question, been generally accepted from him that the antitryptic power of the serum is unaffected by exposure to heat until a temperature approaching the coagulation point of serum is reached. In reality, however, when this is re-investigated quantitatively[2] it emerges that the antitryptic power of the serum is reduced by one-third to one-half when we subject the serum to a temperature of 60° C. for ten minutes.

That difficulty having been removed out of the way of our hypothesis, we may proceed to take cognisance of the results of the crucial test experiments—experiments in which graduated additions of trypsin are made to serum as a preliminary to the implantation of sero-saprophytic microbes. The event of these experiments can be summed up in a sentence. When we add trypsin in quantities sufficient to reduce appreciably the antitryptic power but insufficient to give us any free trypsin, the serum is converted into an eminently favourable nutrient medium for sero-saprophytic microbes.

Our hypothesis is thus very strikingly confirmed. It will be necessary hereafter to follow it into all its consequences. For the present it will, however, suffice if we ponder on the following points. The antitryptic power of the blood would appear to be increased in every case of severe wound infection. We have perhaps here a defensive reaction of the organism directed against a possible invasion of the blood by sero-saprophytes. And we may perhaps look in this direction for an explanation of the non-specific benefit which has been observed to follow upon the inoculation of bacterial vaccines. It is clearly not impossible that the inoculation of a bacterial vaccine might contribute both to active and passive defence—to the active defence of the body against a particular microbe by calling forth a production of specific bacteriotropic substances and to the general passive defence of the organism by calling forth a production of antitrypsin. And these two forms of immunising response would not necessarily be linked together. The production of specific bacteriotropic substances would no doubt depend upon the quantum of bacterial antigen incorporated; while the production of antitrypsin might perhaps depend upon the breaking down of phagocytes and the liberation of their trypsin.

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[2] The quantitative method here employed was in essentials that described in my "Technique of the Teat and Capillary Glass Tube." It was varied only in the respect that the series of trypsin, serum, and calcified milk mixtures which are employed in that method were taken up, not into a many-stemmed pipette, but into a long, unmounted wide-bored capillary stem, which had, for the purpose of convenient filling in, been bent round at one end in the flame of a Bunsen into a syphoning curve.

(To be continued.)

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the committee 28 cases were considered and grants amounting to £252 were voted to 22 of the applicants. An annuity of £26 was also voted to one applicant. The following is a summary of a portion of the cases relieved:—

Daughter, aged 54, of M.R.C.S. Eng. who died in 1898, and practised at Manchester. Was able to earn her living as a clerk until her health broke down. Only income a pension of £15 per annum from her old employers. The Manchester branch of the Guild have assisted with clothes. Voted £14 in 13 instalments.—Widow, aged 55, of L.R.C.S. Edin. who practised at Dulwich. Husband's long illness absorbed all savings. One daughter, who is being educated by a relative. Applicant suffers from varicose veins and quite unable to work. Voted £10 and referred to the Guild.—L.R.C.P. & S. Edin., aged 65, who practised at Walthamstow, suffering from aphasia and quite unable to do anything. Until recently acted as locum-tenent Married, no children. Voted £18 in 12 instalments.—Widow, aged 61, of M.D. McGill Univ. who practised at Waterloo, Liverpool, and had a very long illness. Five children, ages from 30 to 38. Two sons away from home unable to help, and only income from a daughter who is a clerk earning 30*s*. per week. Other two daughters invalids and require constant nursing. Voted £18 in 12 instalments and referred to the Guild.—Daughter, aged 49, of M.D. Glasg. who practised at Bawtry. Has managed to earn a bare living by taking boarders, but has had none since last autumn owing to the war, and is now in great distress. Voted £10 in two instalments and recommended to apply to the Local War Relief Fund.—M.B., C.M. Edin. who practised at King's Heath, Birmingham. Is married, with one daughter aged 15. Applicant's health and his wife's very unsatisfactory. Has lost nearly all his ordinary and panel patients since the war, and is in great financial straits. Voted £10 and recommended to apply to the local branch of the Prince of Wales' Fund.—Daughter, aged 38, of M.R.C.S Eng. who practised in London. Has earned her own living as governess until health broke down and an operation was necessary a few months ago. Hopes when strong again to resume her work. Voted £5 to take a holiday.—Widow, aged 46, of M.B., C.M. Edin. who practised at Glasgow. Has seven children, ages 6 to 26. Husband was ill for two years before his death and was unable to provide for his family. Son who used to help to keep the home recently disappeared. Earns a little by taking in lodgers and has £12 a year from another charity. Previous relief £52. Voted £20 in 12 instalments.—Widow, aged 60, of L.R.C.P. Edin. who practised at Dumfries. Has two sons, both of whom have joined the army, and two daughters whose total earnings are 18*s*. per week. Previous help six times, £56. Voted £12 in 12 instalments.—Widow, aged 42, of M.D. Aberd. who practised in South Africa. Applicant is suffering from abdominal tuberculosis. Has an annuity of £15 from a charity for incurables; total income only £18. Has two children, ages 14 and 15, both of whom are kept by relatives. Relieved three times, £57. Voted £12 in 12 instalments.—Daughter, aged 66, of M.R.C.S. Eng who practised at Tonbridge. Only income derived from one boarder and £10 per year from a friend, and finds it impossible to make ends meet. Previous relief eight times, £96. Voted £12 in 12 instalments.—L.S.A. Lond., aged 82, who practised at West Kensington and is now blind, and son who lives with him also nearly blind. Other son only able to help slightly. Has a pension of £20 from another charity, also old age pension. Previous relief three times, £20. Voted £12 in 12 instalments.—Daughter, aged 37, of L.R.C.P. Edin. who practised in co. Cavan. Earned her living and was able to assist her mother and invalid sister until she had recently to undergo an abdominal operation. Previous relief some years ago, £10. Voted £10 in one instalment for her convalescence.—Daughter, aged 63, of M.R.C.S. Eng. who practised at Bath. Health very bad, and the little capital left by her father spent in endeavouring to get well. Only income an annuity of £31. Relieved four times, £42 Voted £6.—Daughter, aged 51, of M.R.C.S. Eng. who practised at Holland Park. Health very bad and unable to work. Income only £15 per year and a little assistance from friends. Relieved four times, £37. Voted £12 in 12 instalments.—Daughter, aged 64, of M.R.C.S. Eng. who practised at Great Malvern. Has been able to earn a living as a teacher of elocution, but owing to the war has lost practically all her pupils. Hopes to obtain a paying guest shortly, which will greatly help her. Previous relief twice, £22. Voted £10.

Contributions may be sent to the honorary treasurer, 11, Chandos-street, Cavendish-square, London, W.

WAR AND CHOLERA.[1]

BY W. J. R. SIMPSON, C.M.G., M.D. ABERD., F.R.C.P. LOND.,
PROFESSOR OF HYGIENE, KING'S COLLEGE, LONDON.

AFTER a reference to the remarkable fierceness of the battles, the unfavourable weather conditions, the remarkable absence of scurvy, dysenteries, and epidemic diseases that had so far characterised the present war, Professor Simpson pointed out that the armies of Germany and Austria would be in a very different physical, mental, and material condition in August and the autumn of 1915 or 1916 from what they were in 1914, when victory appeared assured to them. Should epidemics then arise they would not be confined to the particular armies that are first stricken, nor would the civil population in the devastated areas escape. He continued:—

Let us glance for a moment at some of the conditions that will be favourable for the development and spread of epidemic disease. Scarcity of food will add to the hardships of the civil population that have the misfortune to be within the fighting zone, for in this great siege war the destruction of crops and cattle will place large areas much in the position of besieged towns in olden days, while the rise in the price of foodstuffs all round, from the disturbance of ordinary economic conditions and from the fewer people left to till the ground, will weigh heavily on the poor in every country engaged in the war. The many millions of men in arms must be fed. Their main supply will come from their own country, but they will also take what they can get from the invaded countries.

This generation in Europe has been so accustomed to regular supplies from overland or sea by the quick transit afforded by steam power and undisturbed agricultural pursuits, supplemented by a world commerce, that the famines, dearths, and scarcities of an earlier period have been forgotten. Now Central Europe is back, more or less, to a time of isolation plus war on a gigantic scale. The effects of droughts and floods, which assumed importance in times of greater isolation of countries, have under modern conditions been counterbalanced by an inrush of produce from other lands, so that the third partner of soil and seed—viz., meteorology—has been assigned of late a very secondary position, which could only continue while each country has the world to draw on. When this ceases, as it has done for some parts of Europe, meteorology assumes its old sway. The winter, so far as it has gone, has been a particularly wet one, not only at the seat of war but outside of it. In one respect this has been an advantage, because of filling the wells, but the wet season and the purposely flooded lands of Flanders will render the conservation of foodstuffs more difficult than under other circumstances, will accentuate the dearth of food in Europe, and add to the threatening destitution and want. The severe earthquake in Italy, with its 24,000 deaths in one district, will not be without its effect on the physical and mental condition of those in the immediate outskirts of this disaster and who have been subjected to the shock.

A combination of war, flood, and earthquake, ending in famine in some localities and in scarcity of food in others, is calculated to be a powerful force favouring in due season the manifestation and spread of epidemic disease, whether it be typhoid or typhus fever, small-pox, cerebro-spinal disease, cholera, dysentery, malaria, or plague, should the germs of these be present and be conveyed from place to place by any of the armies or refugees.

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[1] Abstract of a paper read at the Society of Tropical Medicine and Hygiene, Feb. 19th, 1915.

Cholera Invasions of Europe.

Although cholera is not an endemic disease in Europe, its visitations in the nineteenth and twentieth centuries have destroyed millions of the population. There have been nine invasions of Europe in a little over 90 years. They have varied considerably in their duration, power of diffusion, and severity, the more lengthy ones being distinguished by important recrudescences. Certain localities in Russia, in the neighbourhood of the Caspian Sea, have been so frequently attacked that it is a question whether the disease has established an endemic centre there as it has done in the Far East, in Java, Indo-China, and the Philippines. Although these endemic centres are in themselves a potential danger, it is doubtful whether any of them have hitherto given rise to any considerable diffusion of the disease beyond their own boundaries. The source of the nine invasions in Europe, which have corresponded with similar invasions of the countries in the Far East, has generally been traced to India, though not directly but indirectly, by spreading by land and sea eastwards through the neighbouring countries. On nearly every occasion there has been more than one avenue into Europe, the disease travelling along the chief trade or pilgrim routes in the Near East and radiating in many directions, but there has generally been one principal gateway by which the epidemic has entered Europe, although almost simultaneously there were often others. The interesting and informing reports of the late Dr. Netten, Dr. Radcliffe, and Dr. Barry, and now of Dr. Bruce Low, of the Local Government Board, form a valuable record of the later epidemics.

Professor Simpson then briefly described the nine European invasions of cholera, and epitomised them in the table given below.

European Wars have generally been Free of Cholera.

Notwithstanding the number of invasions of cholera, there have been only three wars in Europe coincident with its presence in the area of hostilities. Cholera was unknown in Europe until a period well after the Napoleonic wars. The first was the Russo-Polish War in 1831. Cholera was very virulent among the troops, and was believed, by the medical men at the time, to have been materially assisted by the war in its dissemination over Europe. The second was the Crimean War, when cholera prevailed over the whole of Europe; and the third was the Balkan War. Cholera was conveyed to the Crimea in transports from France, but it already prevailed in the Russian and Turkish armies. Both the French and the English armies suffered, and it also affected the fleets. The *Timandra*, carrying sick from the Crimea to the Bosphorus, lost 20 the first night from cholera, and between 40 and 50 *en route*. The *Britannia* lost 150 men from cholera in ten days. The most important manifestation in the Balkan War was the outbreak behind the Chataldja lines, where it is estimated there were about 18,000 cases. It was conveyed from there into the Bulgarian army, which spread it among the civil population, through which it passed, and finally the Greek and Serbian armies were affected.

European Invasions of Cholera.

Epidemics in Europe.	Principal entrance gate into Europe.	Interval between each invasion in years.	Number of years continued in Europe.	General characters.
1823	Astrakhan.	—	Less than a year.	Did not travel farther west than Astrakhan. The Persian and Turkish armies, which were at war with one another, suffered severely.
1830–37	Astrakhan.	7	7	Severe and widespread. Very virulent among the Russian and Polish troops. The war was believed to be the great cause of the rapid propagation of cholera in Europe. Great epidemic among the pilgrims at Mecca.
1847–52	Astrakhan.	10	6	Severe and widespread. Invaded a larger area of the world's surface than that of 1830–37, and more deadly. Epidemic at Mecca.
1852–59	Astrakhan.	Nil.	8	More severe and widespread than previous epidemics. On its way through Persia it attacked violently troops of the Shah. Cholera affected the troops in the Crimean War. In 1859 it attacked the French troops in Algeria and the Spanish troops in Morocco.
1865–68 Lingered in Russia till 1874	Constantinople and Southern ports of Europe.	6	10	Severe, but more limited in diffusive power.
1884–87	Marseilles and Toulon.	10	4	Less severe and limited.
1892–96	Baku.	5	5	Less severe and limited.
1905–12	Baku and Astrakhan.	9	8	Comparatively mild and limited.
1912	Constantinople.	—	—	Mild and limited. Prevailed among the Turkish, Bulgarian, Greek, and Servian troops.

Present Position of Cholera in Relation to the Armies.

The danger of cholera prevailing in the zones of hostilities next August is not a remote one. In Europe cholera prevailed in 1914, in Russia in the Province of Podolia; in Hungary in no fewer than 53 different centres; in Austria in 39 centres; in Germany in 10; and in Turkey in 2. In Asiatic Turkey there were two centres on the Black Sea. There is no information about Persia or Arabia, but they are seldom free of cholera, especially during the seasons of the pilgrimages. War will not stop the pilgrimages to Mecca and other holy places.

There is every probability of the existing infections in Europe recrudescing, and although they possess the character of having stayed their time, had it not been for the wars of the past two years, yet there is a risk of them acquiring an exaltation in their strength and powers of diffusion by attacking a population enfeebled by hardship and destitution.

There is also always the risk of Turkish, Russian, and Indian armies bringing from the East to Persia, Egypt, and Europe a new and more potent infection, endowed with greater virulence and capacity for spreading than that of 1913 and 1914.

Moving armies are much in the same position as pilgrims and other crowds travelling from place to place. In the Indian armies the long voyage, the excellent ships they come in, and the sanitary precautions taken, reduce the risk of importation by sea to a minimum, but even here carriers of cholera infection are not totally excluded when thousands have to be transported. The same favourable conditions do not exist on the land routes in Persia and Asia Minor, or wherever the Asiatic troops of the Turks may march. Their condition approximates more to that of the pilgrims. The one hopeful feature against the chances of fresh importation on a large scale is that there are at present no signs of an advancing epidemic from the East. On the contrary, the indications are rather that if there had been no Balkan War, cholera would have disappeared from Europe for a time, as it has done in former invasions. That, however, does not justify neglect of precautions and in not being thoroughly prepared for every contingency.

Modes of Transmission of Cholera.

One of the most potent factors in the dissemination of cholera from place to place and country to country in times of peace, is the movement of crowds connected with commerce, labour, and religion. The great Hindu pilgrimages in India, and the great Mahommedan pilgrimages to Mecca and other sacred shrines, are active agents in the spread of cholera in epidemic form. Many Indian investigators have demonstrated their influence. Some of the exceptional festivals are attended by millions from nearly every part of India, but even the smaller ones are powerful in disseminating the disease, especially those held in the endemic area, such as at Calcutta and Puri. I remember the great outburst at the Ardhodoya Jog, in Calcutta, in 1891. It is a festival that occurs every 37 years. Cholera broke out at the festival and on the return journey of the pilgrims I was able to trace the spread of cholera from village to village through which the pilgrims had passed, and the setting up of local epidemics in the villages on the return of the pilgrims to their homes. No disease has had its extension from place to place so thoroughly traced to the lines of human intercourse as cholera. The influence of the Mahommedan pilgrims from different parts of the world to Mecca is well known. Mecca has played a part in most epidemics as a great disseminating centre. In 1883 I had the opportunity of demonstrating that two factors had played the chief rôle in the outbreak of cholera at Damietta, the first town attacked by cholera in Egypt in the epidemic of that year. One was the importation of the disease by pilgrims returning from the Hedjaz, and the other contamination of the river water from which the inhabitants drew their drinking water. The investigation merely confirmed the discovery of Snow in 1849 and 1854 as to the mode of spread in England and that it was applicable also to Egypt.

So much is known to-day regarding the transmission of cholera that it will hardly be realised that 30 years ago there were acute controversies on the subject.

[Professor Simpson then summarised the history of the cholera controversy from 1886, when Bryden's earth-borne and wind-disseminated theory was in the ascendant, and dwelt on Koch's confirmation in India of his discovery in Egypt of the comma bacillus. Referring to an investigation made by himself and Haffkine, he continued:]

In a paper at the Indian Medical Congress, held in Calcutta in 1894, we demonstrated that out of 46 tanks around which cholera existed, comma bacilli were found in 42, or 91·3 per cent.; and out of five tanks where cholera had disappeared a month to six weeks previously, comma bacilli were not found in any. This latter conformed to a common experience that if a tank was guarded for three weeks or a month, and further contamination with cholera dejecta prevented, the water was safe to drink. Of 15 wells examined, nine of which were in cholera-infected houses, comma bacilli were found in only one; other agencies were at work here. The air of infected rooms was examined and no commas found, even when the body of the deceased had not been removed and the floor of the hut had been soiled with cholera excreta. In a flour shop, a man attacked with diarrhœa had washed his clothes in a tank behind the premises, and we discovered his clothes still wet lying on a portion of flour exposed for sale. From the flour we obtained a culture of the comma bacillus. Cholera bacilli were also found in the surface drains inside infected houses and also in the drains leading to tanks.

But comma bacilli were not confined to the waters of the Hooghly or Tolly's Nullah, or the canal in the suburbs of Calcutta, or to tanks or drains. I had frequently observed a marked coincidence between outbreaks of cholera with diarrhœal disease among calves in the neighbourhood of tanks. This led us to examine cows and calves suffering from diarrhœa in the vicinity of cholera outbreaks, with the result that commas were found in the intestines of fatal cases, especially of calves. We also found comma bacilli in the cesspools connected with the cowsheds in which animals were suffering. The exact connexion of these commas to cholera in man we had no opportunity of determining. Further, in some fish examined by me, I found comma bacilli. Similar observations were subsequently made by Cunningham, Remlinger, and Nouri.

That flies can transport cholera bacilli, which become adherent to the surface of their bodies, was demonstrated by Grassi, Catani, Tizzoni, and Simmonds at an early period. The experiments of Samtchenko, in 1893, in the Kiew laboratory showed that cholera micro-organisms could live and multiply within the bodies of flies. Both observations suggested the possibility of contamination of food and the indirect spread of cholera by flies. In 1894 there was an outbreak of cholera in the Gaya jail, and Dr. Macrae, of the Indian Medical Service, traced it to the drinking of milk contaminated by flies from a neighbouring latrine. Haffkine isolated the comma bacillus from the milk.

Since the epidemic of 1892, at Hamburg, it has been frequently observed that persons who have been in contact with cholera patients, or living in infected localities, may have cholera bacilli in their intestinal discharges although they are perfectly well and never have had cholera. They are in the same position as persons who have been in contact with diphtheria and get lodged in their throats the diphtheria bacillus, which is harmless to them but dangerous to others. A certain percentage of those attacked with cholera become chronic carriers. Early observers have examined the bile of fatal cases and established the fact that the cholera bacillus in a certain percentage of cases is to be found in a pure culture in the bile. Major E. D. Greig, I.M.S., in 1913, confirmed these observations by investigations he was making at Puri during the pilgrim festival there. Out of 270 post-mortem examinations he found cholera vibrios in the gall-bladder in no fewer than 80 cases, and they were not only on the surface of the mucous membrane but also in the submucous tissue. This fact brings cholera into the same category as typhoid fever as regards the production of chronic cholera carriers. But cholera becomes even more closely allied to typhoid fever in its modes of dissemination when two very important facts, discovered and established by Major Greig, are taken into account. The first is that out of 55 cases of cholera he found the comma bacillus in the urine of eight of his patients, and in two of these cases the bacillus was recovered during the stage of convalescence, when the persons were going about their work. The other important fact is that he has found cholera bacilli in the lungs and other organs of some fatal cases of cholera.[2]

Preventive Measures and Anti-cholera Inoculations.

With cholera introduced into the war area, and its capability of spreading by carriers, by water, and by food or drink contaminated by infected stools or urine, by infected latrines and flies, contaminated boots, clothes, utensils, and hands, there is, when the season of the year and the condition of the population are favourable, a strong probability of much loss from this disease, and it is because of this probability that measures should at once be taken to prepare to combat this disease, and to protect the troops against cholera in Asia Minor, Egypt, and Europe.

It is obvious that disinfection of the latrines and the protection of water-supplies or purification of water are essential parts of any preventive measures. So are the isolation of the sick and the retention of convalescents until free of cholera bacilli in the fæces and urine. The disinfection of the latrines is necessary to prevent the contamination of flies which crowd to these latrines, and to prevent contamination of boots, &c. But as the conditions of warfare often render this difficult, if not impossible, and what may be done in our army may not be done in another, so that the one that takes precautions may suffer owing to neglect on the part of the other, it is important that the soldiers should be also protected by inoculation against cholera if that inoculation renders them less susceptible of being attacked by the disease.

There can be no doubt that the very extensive experiments with Haffkine's prophylactic against cholera, which were carried out in India on man and not on laboratory animals, 20 years ago, established the fact that these inoculations gave a very high protection against cholera attacks for at least one year. The experience gained in the cholera experiments was the guide to the preparation of the well-known Haffkine's prophylactic for plague, which has proved such a boon to communities attacked with plague. As most of the cholera vaccines—except those used in Upper India—were prepared in my laboratory at Calcutta, and as I had to collect the statistics relating not only to the experiments in Calcutta, for which I was responsible, but also with reference to the inoculations in different parts of India, in order to report on the subject, I can speak from experience as to their value. Haffkine and myself were ably seconded in the work by my medical assistants, more especially by Dr. R. Sen, Dr. Jogendra Nath Dutt, Dr. Sasi Bhusan Ghose, and Dr. J. J. Chowdry. The only disappointing result was connected with the first experiment, when, as a matter of caution, the soldiers of the East Lancashire Regiment were inoculated with only weak vaccine in small doses: after the lapse of 14 months from the time they were inoculated cholera of a very virulent character attacked the regiment, but even under the unfavourable conditions mentioned—viz., 14 months since the inoculation, the use of weak vaccines and small doses, and the type of the attacking cholera particularly virulent—the inoculated suffered to a less degree than the non-inoculated, thus: 640 non-inoculated soldiers had 120 cases (18·75 per cent.) with 79 deaths (12·34 per cent.); 123 inoculated soldiers had 18 cases (13·55 per cent.) with 13 deaths (9·77 per cent.).

As regards all the other experiments, whether among prisoners in jails, or coolies in camps or tea gardens, or among the general population in the bustees of Calcutta, the protection was of a most marked character. But it was observed that, as a general rule, the period of immunity did not last for more than 14 months. It would take too long to give you all the results recorded, but they are to be found in my annual report for 1896, and a much fuller account, with details, are given in Haffkine's paper on Protective Inoculation against Cholera, published in India in 1913. I shall give you those of Calcutta and of the Cachar tea-gardens.

7,690 persons were inoculated against cholera in 27 months, mostly in those bustees, or collection c huts, in which the poorer people lived, and which were usually visited by cholera year by year. Every effort was made by persuasion to get half the members of the hut inoculated. In some cases we were successful in this respect, in others not. We inoculated in the huts and then waited events. A complete register, with all details relating to each of the inoculated and the non-inoculated in the hut, was carefully kept, and when a case of cholera was reported investigations were immediately made. In the 27 months cholera visited 71 houses, in which inoculated and non-inoculated persons were living in the same households, and the following table shows the days on which cholera occurred among the non-inoculated and inoculated :—

Amongst the uninoculated members, after — 1, 2, 3, 4, 5,
and among the inoculated of the same households, after 0, — 2, 3, 4,

6, 9, 12, 13, 15, 17, 22, 34, 37, 44, 57, 62, 63, 71, 95, 99, 109,

114, 118, 119, 120, 129, 132, 139, 143, 162, 189, 191, 203, — 240,
219

251, 271, 281, 284, 300, 309, 318, 319, 334, 356, 359, 362, 370, 372,

378, 383, 384, 389, 391, 393, 394, 401, 404, 408, 416, — 433, 446,
421

448, 453, — 472, 493, 498, — 673, — 720, 723, 724, 730, —
459 512 688 735

and 738 days.
and 738 days.

During the first four days after the inoculation, cholera occurred among both the inoculated and non-inoculated, though in a smaller degree among the inoculated; after the first four days, there was a period of over a year when there was almost an absolute freedom among the inoculated, while among the non-inoculated in the same houses cases were occurring during the whole year; after 14 months cases began gradually to reappear among the inoculated as well as among the non-inoculated. Including the occurrences of cholera in the inoculated during the first four days the results for the whole period were as follows:—654 uninoculated individuals had 71 deaths (10·86 per cent.), while 412 inoculated in the same households had 12 deaths (2·99 per cent.).

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[2] Indian Journal of Medical Research, vol. i., 1913.

The figures show that notwithstanding the incomplete protective effect of the first four days, and the gradual disappearance of the resistance in those inoculated with doses of weak vaccines only, which a number of the inoculated people received in the earlier days of the experiment, the mortality among the inoculated compared with that of the uninoculated was in the proportion of 1 to 3·63, giving a reduction of mortality of 72·47 per cent., or in other words, where inoculations were performed and which were subsequently visited by cholera there occurred for every 11 deaths amongst the uninoculated three deaths among a similar number of inoculated.

Even in regard to the first four days it was found that the mortality among the inoculated was 1·86 times smaller than among the non-inoculated, and that after that period the inoculated acquired a protection which, for a year at least, rendered them 22 times safer than the non-inoculated. In Haffkine's pamphlet on Protective Inoculation against Cholera, which covers a larger number of observations in Calcutta and a longer period—viz., 53 months instead of 27—he found that the number of deaths among the inoculated during the first our days was 1·39 times smaller than among the non-inoculated, and that during the period of mmunity lasting 412 days or 14 months, the number of deaths among the inoculated was 15·79 imes smaller than among the non-inoculated. It was also noticed that in bustees, where large numbers were inoculated, and which usually suffered rom cholera, there was in many instances an exceptional freedom from the disease.

Gradually, as more experience was gained, the attenuated vaccine—Vaccine No. I.—was given up and Vaccine No. II., the fixed and strong vaccine, was used instead. The latter was employed in the Durbhanga jail in April, 1896, during the progress of a very fatal epidemic. The prisoners were paraded, and every second man or woman was inoculated. The result was that after the inoculation, among a strength of 99 non-inoculated, there were 11 cases (11·11 per cent.), all fatal; while among 110 inoculated, there were 5 cases (4·55 per cent.), with 3 deaths (2·73 per cent.).

The strong vaccine was used on a large scale on coolies of the Cachar tea-gardens who, inoculated and uninoculated, lived together in the same huts. The results are recorded by Dr. Arthur Powell:—6549 uninoculated had 198 cases (3·02 per cent.) with 124 deaths (1·89 per cent.); 6778 inoculated had 27 cases (0·47 per cent.) with 14 deaths (0·24 per cent.).

The two vaccines with which the Indian experiments were made, and which established their protective value, consisted of live cultures. Vaccine II. was a strong vaccine fixed in strength by a process in the laboratory, into which I need not enter, but which is frequently erroneously called Kolle's method by those who are not familiar with the fundamental experiments made by Haffkine in India. Vaccine I. was an attenuated preparation of Vaccine II.

Experience with the inoculations indicated that the weak vaccine was not so protective as the strong, and that the strong vaccine, though it caused, when inoculated into a guinea-pig without a preliminary inoculation of the weak vaccine, a necrotic swelling produced no such effect on man. In fact, the experiments on man brushed aside many of the theories and deductions formed from similar experiment on laboratory animals. Another experience was that it is not safe to rely on the vaccine giving protection for more than 14 months, and, lastly, that though the weak and strong vaccine protected against attacks of cholera, they had not the same protective effect against death as the two strong vaccines when an inoculated person was attacked with the disease. It was because of the experience gained with the cholera vaccine that a different mode of preparation of the vaccine against plague was adopted and because plague is a septicæmic disease the vaccine was devitalised. The value of the chemical product thus prepared and used as a prophylactic for plague, both in protecting against attacks of plague and reducing the chances of death when attacked, has been well established. In cholera some devitalised preparations of vaccines were used in India, but no opportunity was offered for testing their efficiency. It was the live cultures that were used, and it is generally agreed that they are more efficient than dead cultures. Haffkine holds the view that similar experiments are needed to test the value of the devitalised vaccines of cholera, as those which were employed to ascertain the efficacy of the live vaccines of cholera and the devitalised vaccine of plague.

There can be no doubt that devitalised vaccines, if efficient, are the best for administration on a large scale, and although there has been no scientific proof of their efficiency, based on researches on man, such as have established the value of the living vaccines of cholera and the devitalised vaccines of plague and typhoid fever, yet there are occasions on which they have been used in which evidence of a general character has indicated that they also are of great value and similar in character to those of typhoid and plague. When visiting Kitasato's laboratory in Japan in 1902, I found the devitalised cultures of Vaccine II. were being used with what was believed to be satisfactory results. Over 70,000 people were inoculated with this vaccine. Castellani has used the devitalised vaccines in Ceylon since 1905, combined with those of typhoid fever and paratyphoid A and B in one mixture.[3] This is a combination which saves and eliminates an unnecessary number of inoculations and which at the same time does not produce any antagonistic effect. The devitalised preparations were employed in Petrograd in 1908 and 1909 and in Batavia in 1910 and 1911, over 30,000 people being inoculated in each of these towns. Similarly the devitalised preparations were employed on a large scale by the Greeks during their military operations in Macedonia in 1913. The appearance of the first cases of cholera at Chataldja in the Turkish army, and later in the Bulgarian army, decided the Greek authorities to begin a general vaccination of the army and of the civil population of that part of

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[3] Brit. Med. Jour., Nov. 7th, 1914.

Macedonia occupied by the Greek army. For this purpose two anti-cholera ambulances were attached to each division of the army. One was a rapidly travelling section containing a well-equipped laboratory and disinfecting stove, under the direction of a medical bacteriologist, and the other a stationary section, under the direction of a medical man, equipped with material necessary for transport and treatment of 25 cholera patients. Some 50 bacteriologists were employed, of whom 35 were civil and 15 military, and the inoculations were performed by the regimental medical officers and the civilian doctors in different localities, who were supplied with material and printed instructions. The organisation and administration of the anti-cholera campaign, both in the army and civil population, was placed in the hands of Professor C. Savas working in conjunction with M. Manoussos, the principal medical officer of the army. Professor Savas gives in the *Bulletin of the Office International d'Hygiène Publique*, of October, 1914, a very full account of the measures taken to carry out anti-cholera inoculations in the army and civil population in the infected area, and the effect they had in checking and suppressing the epidemic.

Approximately half a million persons were inoculated. This included about 150,000 soldiers, 350,000 civilians and refugees in Macedonia, and about 150,000 civilians and refugees in Salonika. In ten divisions, consisting of 114,803 soldiers, which took part in the Græco-Bulgarian War, there were only 2192 cases of cholera (19 per 1000). The incidence on inoculated and not inoculated was as follows:—

2 vaccinations.	91,224 soldiers	had 644 cases	= 7	per 1000.
1 vaccination.	14,613 ,,	,, 618 ,,	= 42	,,
Not vaccinated	8,968 ,,	,, 634 ,,	= 93	,,

Those vaccinated only once had six times more cholera cases than those vaccinated twice, and those not vaccinated had 14 times more. If to the non-vaccinated be added 96 fulminating cases which are stated to have occurred among them, the ratio rises to 103 per 1000.

It was reported by the principal medical officers of divisions that as soon as the vaccination of these were finished, cholera disappeared as by enchantment, and only remained sporadic among soldiers sent to fill up vacancies, and who had not been vaccinated, and this though the soldiers remained in localities where cholera was prevailing amongst the civil population and the refugees.

Further, in the first division, specially in which the first cases of cholera occurred, and in which the double vaccination had been completed before hostilities commenced, there were only a few cases of cholera reported, and only among soldiers who had been sent from Athens and had not been vaccinated, whilst the other divisions which coöperated with them were attacked by the epidemic.

It was noticed, also, that in the towns and villages a double vaccination of the inhabitants was followed by a sudden decrease and prompt disappearance of the epidemic, and it is to these vaccinations that Professor Savas ascribes the control and suppression of the disease, both in the army and among the civil population of the infected towns, and the protection of Greece from the ravages of cholera when the population was under conditions where other sanitary precautions were difficult or impossible to adopt.

The success attending these inoculations is similar to that which I have had in regard to plague. In 1913 the whole population of Mombassa, resident and floating, was inoculated during an epidemic of plague, with the result that the disease was effectually stamped out. I had a similar experience in 1908 in West Africa. In both localities pneumonic, as well as bubonic, plague prevailed. The inoculations were, of course, combined with all other known methods of combating the disease.

Professor Savas attributes to the inoculations the saving of Greece from a serious epidemic; concludes that 99 per cent. of persons inoculated twice remained refractory to the epidemic; and classes anti-cholera inoculations among the most efficacious preventatives against cholera.

While recognising the extraordinary good effect which the inoculations had in checking and suppressing cholera in this particular campaign there is one important point which has to be remembered in order to gauge the power of the inoculations at their true value, and that is that the type of cholera was not of a virulent character except in the 96 fulminating cases among the non-inoculated. The vaccines were capable of dealing with the epidemic, but it was a comparatively mild epidemic that was dealt with.

There is much variancy in the virulence of epidemics of cholera. I have seen an epidemic in which the mortality was as high as between 80 and 90 per cent., and I have seen others which have had a mortality of less than 20 per cent. It is important in preparing vaccines against an epidemic to obtain for the inoculations a natural strain of cholera bacillus from as virulent a type of cholera as possible, in order that the immunising effect shall be well above the type of the epidemic, and in order that it can be maintained with ease at a high and fixed state of virulence in the laboratory. Whether the present Russian strain will be the most effective to combat any natural exaltation of epidemics due to recrudescences or importation under the conditions mentioned, may well be a matter of doubt, seeing that since 1911 its virulence and capacity to spread have been diminishing.

I think Castellani's method of mixing the vaccine is well worth consideration as being practical and convenient. It is not doing anything different from inoculating on one arm with typhoid vaccine and vaccinating on the other at the same time against small-pox.

SOME CASES OF BLOOD INFECTION B AN ANAEROBIC ORGANISM SECONDARY TO WOUNDS.

BY ADRIAN STOKES, M.D.DUB., F.R.C.S.IREL.,
LIEUTENANT, R.A.M.C. (TEMP.).

DURING the months of October, November December, and January, while doing bacteriological work in connexion with the clearing hospitals, a series of cases in wounded men occurred giving the same clinical and bacteriological picture. The clinical picture was characterised by four separate features: (1) the colour of the patient, which was a dirty yellow, something like the colour of a dirt deal table; (2) the soft, running pulse, which was always very rapid, often uncountable, and i the later stages irregular; (3) uncontrollable vomiting; and (4) the rapid onset of the condition after the injury. The presence of obvious gangrene at the site of the wound was inconstant; in three of the six cases reported it was present, in the remaining three it was absent. Death occurred in every case with great rapidity, 48 hours being the average time; one case survived 80 hours. The patient was always conscious to the end and in a state of "euphoria."

It appeared probable from the great similarity of the symptoms and the invariable result in every case that there might be a common cause. The presence of the bacillus of malignant œdema was suggested as the probable explanation. An attempt to isolate the organism from the wounds having failed in two cases, it was thought that it might be found in the blood stream, and accordingly blood cultures were made in the series of cases reported. In six cases a culture was obtained by this method of an organism which was indistinguishable from the bacillus aerogenes capsulatus. The blood cultures were made in three cases immediately after death from the heart's blood, and in the three remaining cases the blood cultures were ante mortem. Two patients died after a week in hospital from typical gas gangrene; the culture was negative in one case ante mortem and in the other post mortem. The former case had been twice operated on in attempting to stay the spread of the gangrene; in the latter it was thought that the patient would not stand re-amputation—in this case the culture was ante mortem, and gave a positive culture of staphylococcus aureus. These two cases seem to make it probable that the series in which positive cultures of an anaerobic organism were obtained may be a separate and distinct condition. The number of cases in which it was possible to verify the diagnosis of blood infection by culture is small; on the other hand, there were no negative cultures in cases which were regarded as typical of the condition. The six cases in which blood cultures were positive were as follows:—

Case.	No. of c.c.	Place.	Hours of survival after wound.	Time of blood culture.	Projectile.	Wound.
1	4	Braisne.	50	P.M.	Shell.	Compound, femur.
2	4	Poperinghe.	40	P.M.	Shell.	Compound, femur.
3	4	Poperinghe.	60	P.M.	Bullet.	Compound, humerus.
4	4	Lillers.	48	A.M.	Shell.	Compound, humerus and femur.
5	1	Béthune.	80	A.M.	Bomb.	Arm, no fracture.
6	4	Lillers.	40	A.M.	Shell.	Compound, femur.

The technique adopted was the same in all the cases. Shake cultures in glucose-agar were made as soon as possible after the blood was taken; at the same time ordinary aerobic blood plates were made which in every case were negative at the end of 48 hours. In the shake cultures bubbles of gas were observed in all the cultures on the next day. In five of the positive cultures gas appeared with great rapidity, in two it was apparent in six hours, and in three it appeared in ten hours. The culture was profuse and the formation of gas abundant, the agar being forced to the top of the tube. Growth ceased within an inch of the surface of the medium and seemed most active about two inches from the surface. The organism was a Gram-positive bacillus, most of the bacilli taking the Gram stain well, a few individuals losing the stain, and a few showing a beaded appearance. The bacilli varied a good deal in length, forms longer than anthrax being common and forms as short as B. coli were found; it did not form spores in glucose-agar and died out in one week in that medium. In one culture (Case 4) capsules were stained; in the others they were apparently present, but it was not possible to stain the actual capsule. The colonies were dense and opaque, and on McLeod's plates made with blood-glucose-agar they showed a distinct hæmolytic power. The organism is non-motile. It was possible by making use of the hæmolysis to isolate the same microbe from two quite harmless wounds, one in the leg, the second in the thigh. One culture (Case 4) killed a guinea-pig in 15 hours; another culture (Case 5) made a pig very ill, but it did not die; these were the only cultures injected into animals. There were a large number of cases presenting the same clinical picture in which it was not possible to do blood cultures to verify the diagnosis.

From the very rapid onset of the symptoms it is probable that the infection of the blood stream is either at the time of injury or very soon after it.

NOTE ON A CASE SHOWING

THE FREQUENT OCCURRENCE OF AN AURICULO-VENTRICULAR RHYTHM ASSOCIATED WITH A LONG A-C INTERVAL.

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IN describing the following case I shall assume it to be proved that under normal conditions the heart beats in response to a stimulus formed in the sino-auricular node, and shall refer to this rhythm as the S.-A. rhythm. I also shall assume it to be proved that, under certain conditions, the seat of the impulse formation in the mammalian heart may temporarily or permanently shift from its normal site in the sino-auricular node to some other portion of the heart, more particularly to parts containing specialised tissue of the same nature as the sino-auricular node.

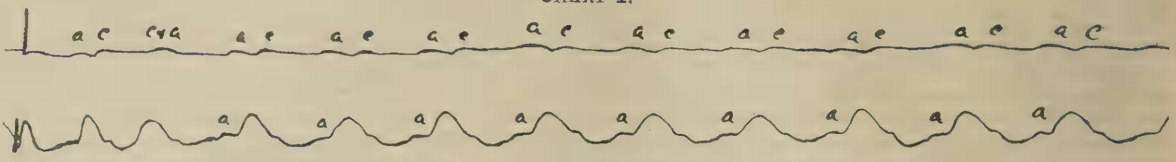
In addition to the sino-auricular node the chief mass of this specialised tissue is the auriculo-ventricular node of Tawara and the bundle of His. Since the discovery of this tissue in the mammalian heart a large amount of experimental work has been carried out by Engelmann, Lohmann, Hering, Rothberger and Winterberg, Ganter and Zahn, Kuré, Meek and Eyster, Lewis, and others on the relations existing between the sino-auricular and auriculo-ventricular nodes.

These investigators have shown that procedures which depress, injure, or extirpate the sino-auricular node, such as cooling, cutting, clamping, burning, and poisoning with certain drugs such as formalin, bring on a condition in which the normal interval between auricular and ventricular contraction becomes markedly shortened or even negative, the contraction of the auricle following, instead of preceding, the ventricular contraction. An exactly similar condition is produced by procedures which stimulate the auriculo-ventricular junction such as left accelerator stimulation.

Most authorities are now agreed that in these circumstances the sino-auricular node has ceased to act as the pace-maker of the heart, and that the auricles and ventricles then respond to a rhythmical stimulus originating in some part of the auriculo-ventricular node, which stimulus throws the auricles and ventricles into more or less simultaneous contraction. I shall refer to this rhythm as the auriculo-ventricular rhythm.

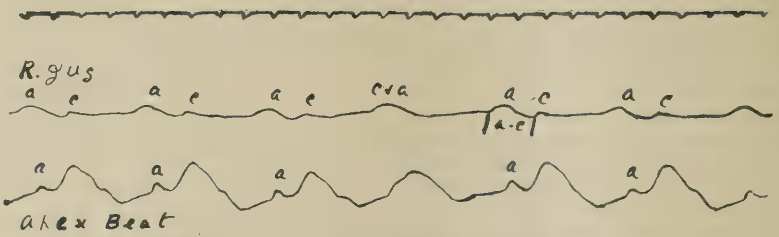
The following case was admitted into the Aberdeen Royal Infirmary on April 7th, 1914, under Professor A. W. Mackintosh, to whom I am indebted for permission to publish it.

CHART 1.



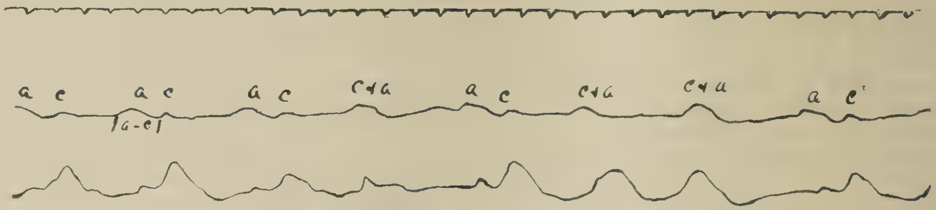
Upper tracing: jugular pulse. Lower tracing: apex beat. Note extrasystole ($c + a$) at second cycle.

CHART 2.



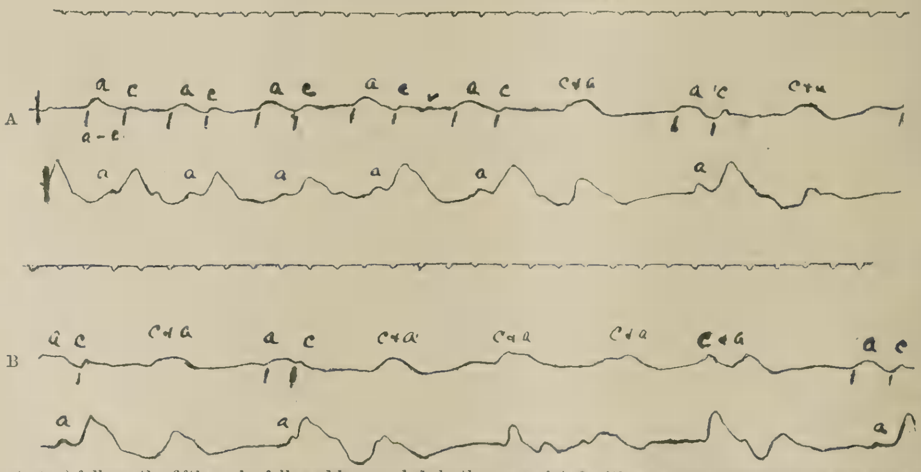
Same rhythm, with extrasystole ($c + a$) at fourth cycle.

CHART 3.



Note the two extrasystoles ($c + a$) following one another.

CHART 4, A AND B (*continuous*).



Extrasystole ($c + a$) follows the fifth cycle, followed by coupled rhythm, associated with a gradual diminution in the a-c interval until in the fifth and sixth couples the auricles and ventricles contract simultaneously, the a-c interval reappears at the seventh couple.

The patient was a male, aged 33, a labourer. He stated that he had never had rheumatism, but had suffered from some form of venereal disease in 1905. Up to three weeks before admission to hospital he had felt quite well and able to do his work without any discomfort. He then began to suffer from pain over the epigastrium. This pain was brought on by exertion and diminished by rest. About the same time he also began to be troubled with severe breathlessness on exertion, and a fortnight before admission to hospital he had to give up work on account of severe dyspnœa, which was brought on by the slightest exertion.

On admission to hospital the patient was able to lie quite comfortably in bed. There was no œdema and the urine was free from albumin. The liver was not demonstrably enlarged. The Wassermann reaction was strongly positive in the blood. The apex beat of the heart was in the fifth intercostal space, one inch outside the nipple line. There was a mitral systolic murmur and the sounds over the aortic and pulmonary areas were almost inaudible.

The heart's action presented several interesting irregularities. On the day after admission the heart-rate was 150 per minute and a polygraphic tracing showed a coupled rhythm. Each normal heart beat was followed by an extrasystole with a compensatory pause. The *a-c* interval was just one-fifth of a second. During the extrasystole there was only one wave in the jugular tracing which was synchronous with the wave in the carotid tracing. This wave was larger than the *c* waves of the normal cardiac cycles and suggested that the auricles and ventricles were in simultaneous contraction. The patient was put on ʒi of tincture of digitalis daily, and this was continued for eight days. After ʒii of the digitalis the pulse-rate fell to 75 per minute, and apart from an occasional extrasystole the pulse became regular for considerable periods. Chart 1 is an example of this rhythm. Except for an extrasystole occurring at the second cycle the heart's action is perfectly regular. The jugular pulse shows well-marked *a* and *c* waves corresponding to each cardiac cycle. The *a-c* interval is prolonged. The apex-beat tracing shows an unusually well-marked *a* wave preceding the ventricular rise. Chart 2 shows the same rhythm with the occurrence of an extrasystole at the fourth cycle. The *a-c* interval is definitely prolonged. The extrasystole is fully compensatory and the jugular tracing shows only a single wave *c* synchronous with the ventricular rise in the apex-beat tracing. This *c* wave, however, appears at exactly the moment when a normal auricular contraction is due, and from a polygraphic tracing alone it is impossible to say whether the simultaneous contraction of auricles and ventricles is due to a ventricular or an auriculo-ventricular extrasystole. Occasionally two such extrasystoles followed one another, as seen in Chart 3.

In addition to these extrasystoles the heart's action showed the frequent occurrence of the irregularity seen in Chart 4, A and B. In this tracing the first five cycles show, both in the jugular and apex-beat tracings, auricular and ventricular waves with a prolonged *a-c* interval. Following the fifth cycle is an extrasystole of the same type as in Charts 2 and 3. From here onwards we have a coupled rhythm with a gradual diminution in the *a-c* interval of the first beat of the couple till in the fifth and sixth couples the *a-c* interval has completely disappeared, and the auricles and ventricles are contracting simultaneously. At the seventh couple the *a-c* interval again appears. This peculiar rhythm frequently appeared during the patient's stay in hospital, and always presented the same features.

This gradual disappearance of the *a-c* interval can only be attributed to a temporary change in the site of the pace-maker of the heart from the sinus node to some part of the A.-V. node or bundle, probably the result of an irritative lesion in that neighbourhood. As corroborative evidence we have the presence of extrasystoles and a prolonged *a-c* interval. The fact that in the experimental production of an A.-V. rhythm the *a-c* interval shows a gradual shortening and not an abrupt disappearance has been demonstrated by Hering and others. It has been suggested that this gradual change depends either on a gradual shifting or wandering downwards of the pace-maker or to changes in conduction time.

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Aberdeen.

A CASE OF ACHOLURIC JAUNDICE.

BY W. HARMENS, M.B., B.C. CANTAB.

THE following case presents several points of interest both as regards diagnosis and treatment.

The patient is a married woman, aged 27, who has two children, both girls, aged 5½ and 2½ years respectively. In neither is there any enlargement of the spleen. Her maternal grandmother died in rather early life from a "floating tumour" in the abdomen. Her mother died seven years ago from "hæmorrhage," having been in bed a month. Splenic enlargement had been noticed 16 years before her death. During that time she had much ill-health with repeated attacks of jaundice. She was always more or less "yellow." When the patient was 16 years old a swelling was noticed in her left side. Jaundice appeared for the first time 18 months ago, and she lost considerably in weight. She complained of inability to do her work properly, loss of appetite, and feeling generally ill. A considerable amount of pain was present in the left side of a dragging nature, but it was never acute. She was sent to St. Thomas's Hospital about 18 months ago with the diagnosis "splenic enlargement." There she gradually improved under treatment. The spleen extended to a point at the level of the umbilicus. The liver was also slightly enlarged. A moderate degree of anæmia was present. Her blood count at that time was: red cells, 3,000,000; white cells, 9200. An X ray examination was made but was negative.

In the beginning of May, 1914, the same symptoms reappeared. A slight degree of jaundice developed, which gradually became deeper but was never intense. The pain in the left side was nearly always present and often severe, and prevented her carrying on her household duties. She looked pale and anæmic, and said she had lost flesh. There was marked enlargement of the spleen, which extended to a point half an inch below a horizontal line drawn through the umbilicus. No tenderness was present. The liver was slightly enlarged, and extended from the sixth rib above to a point three-quarters of an inch below the costal margin. Hæmic murmurs were present over the heart. The urine was very dark in colour, acid in reaction, of specific gravity 1024, and contained no albumin or sugar. Bile pigment was not present. There were no signs of disease elsewhere. In view of her symptoms I sent her to St. Thomas's Hospital, where she was admitted under Dr. H. G. Turney. On July 9th a differential blood count was made by Dr. L. S. Dudgeon as follows: Erythrocytes, 4,000,000; slight poikilocytosis present; rouleaux formation fair; fibrin formation fair. Hæmoglobin, 90 per cent. Colour index, 1·1. Leucocytes, 10,240; polynuclear neutrophiles, 64·25 per cent.; polynuclear eosinophiles, 2·25 per cent.; small lymphocytes, 25·75 per cent.; large lymphocytes, 3·50 per cent.; large hyaline, 3·25 per cent.; coarsely granular basophiles, 1·00 per cent. No nucleated red cells were seen. The coagulation-time was normal. The fragility of the red cells, tested by sodium chloride in distilled water, was very markedly increased as in congenital cholæmia.

NaCl.	Normal.	Case under discussion.
0·1%	... Complete hæmolysis ...	Complete hæmolysis.
0·2%	... ,, ...	,,
0·3%	... ,, ...	,,
0·4%	... Tinge ...	,,
0·5%	... No hæmolysis ...	,,
0·6%	... ,, ...	Faint tinge.
0·7%	... ,, ...	Trace.
0·75%	... ,, ...	No hæmolysis.
0·8%	... ,, ...	,,

A Wassermann reaction was done but was negative. While in hospital the temperature was slightly raised, 100·2° F. being the highest recorded. The mean was about 99·4°.

For reasons which will presently be discussed it was decided to remove the spleen. The operation was performed on July 27th by Mr. H. Betham Robinson. The anæsthetic used was chloroform and ether. The peritoneum was found to be adherent in many places. The patient stood the operation well, and had the stitches removed on the seventh day. On August 5th another examination of the blood was made as follows:—Erythrocytes, 3,612,500; rouleaux formation good; fibrin formation good. Hæmoglobin, 75 per cent. Colour index, 1. Leucocytes, 7800; polynuclear neutrophiles, 42·75 per cent.; polynuclear eosinophiles, 2·75 per cent.; small lymphocytes, 32·00 per cent.; large lymphocytes, 9·00 per cent.; large hyaline, 12·00 per cent.; and coarsely granular basophiles, 1·5 per cent. On August 12th, the day of her discharge from hospital, the fragility of the red cells was much less than at the previous examination.

NaCl in distilled water.	
0·1 per cent.	Complete hæmolysis.
0·2 ,,	,,
0·3 ,,	,,
0·35 ,,	,,
0·52 ,,	Faint trace.
0·55 ,,	No hæmolysis.
0·6 ,,	,,

The patient's weight on admission was 7 st. 6 lb. and on her discharge 7 st. 12½ lb. Her colour had greatly improved, and her appetite was good. On Oct. 1st the fragility of the red cells was again tested and was found to be practically normal.

NaCl in distilled water.	
0·38 per cent.	Complete hæmolysis.
0·52 ,,	Trace.
0·6 ,,	No hæmolysis.

For a time after the operation the patient had a slight limp and a dragging pain in the left side. These symptoms have completely disappeared, and she says she feels perfectly well. She is able to carry out her household duties and look after her husband and children. She is delighted with the change in herself since the operation.

Two clinical groups of acholuric jaundice may be recognised: in the one the condition is congenital and hereditary or familial, in the other acquired and lacking the hereditary tendency. In other respects the course and symptoms of the two groups are identical. The case just described seems to be a compromise between the two types. On the one hand the hereditary tendency is very marked, while on the other there was no appearance of symptoms till about the time of puberty. Of course it is possible, as there was never anything like persistent jaundice, that the case was really congenital but latent.

With regard to the indication for operation, it must be granted that the mere diagnosis of acholuric jaundice is not in itself sufficient. The condition, whether congenital or acquired, is compatible with many years of healthy life. In this patient the impairment of general health was very considerable. Abdominal pains were more or less persistent. They were due probably to the dragging of the splenic tumour so far as the more chronic ones were concerned, but in addition to these there were others of a different type and of a different distribution which occurred synchronously with the attacks of jaundice, and were dependent to all seeming upon changes in the gall-bladder and ducts. These symptoms in themselves afforded sufficient justification for the removal of the spleen, especially as the organ was of moderate size and its extirpation promised to be attended with the minimum of risk. But in addition to these actual inconveniences from which the patient might be promised relief there were others looming in the future which could not be ignored. The mother died from hæmatemesis 16 years after the enlargement of the spleen was diagnosed, and there is no ground for suspecting in her case either alcoholic excess or the presence of a gastric ulcer. It is quite certain that the exaggerated hæmolysis which is the underlying condition of acholuric jaundice must throw an enormous increase of work upon the liver, and there is clinical evidence of this in the enlargement of that organ. Eppinger has shown that even during apparently quiescent periods of acholuric jaundice the excretion of urobilinogen may be increased ten- or even twenty-fold, and increase of function to this extent must surely entail some danger of structural change in the long run in the organs concerned. The history of the mother's illness is, to say the least, suggestive of the same sequence of pathological events that we find in Banti's disease, and in both mother and daughter we find the same history of repeated attacks of jaundice with enlargement of spleen. So far as I am aware, the only change hitherto described as occurring in the liver in these cases is the accumulation of pigment-bearing cells without cirrhosis, but pathological evidence of any sort is far too scanty for a final verdict.

I wish to acknowledge the great kindness of Dr. Turney in the help he has given me, and to thank both him and Dr. Dudgeon for the use of the notes on the case.

Addlestone, Surrey.

CEREBRO-SPINAL MENINGITIS: MENINGOCOCCI FOUND IN PERIPHERAL BLOOD FILMS.

BY ALFRED C. COLES, M.D., D.Sc., F.R.S. EDIN., M.R.C.P. LOND.,

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Dr. A. D. Edwards, medical officer of health of Bournemouth, has given me the following notes of this septicæmic type of case of cerebro-spinal meningitis.

The patient, a male aged 33, a carpenter, was at work on the morning of March 15th, when he complained of pains in the lower part of the back, felt shivery, and soon afterwards vomited. After this sudden onset the patient became rapidly worse, and by the evening he complained of "aching all over." A purpuric rash appeared on the following morning on the brow and face. Retraction of the head was not present at this or any other stage of the illness. Dr. Edwards saw the patient for the first time on the afternoon of March 16th when his temperature was normal, but the pulse could not be felt. There was a well-marked purpuric rash on the face consisting mainly of more or less circular spots, dark purple in colour. There was also extravasation of blood on the trunk, especially on the buttocks. The patient was conscious and complained of "pains all over," so that he could not rest easily in bed. Pains in the knees and elbows were marked, especially on movement; for this reason Kernig's sign was not available. On lumbar puncture 25 c.c. of cerebro-spinal fluid were removed, and antimeningococcic serum was injected to the same quantity. The fluid came out slowly; it was mixed with blood, but otherwise was not very turbid. No growth occurred on blood serum or on agar, although there was blood in the inoculating fluid. The patient's temperature rose on the night of March 16th to 102° F., but fell on the morning of the 17th. There was diarrhœa on the night of March 16th, and the vomiting which had been occasional became frequent on the morning of the 17th. During that morning the patient became comatose and died on the afternoon of the 17th, 50 hours after the onset of the first symptom.

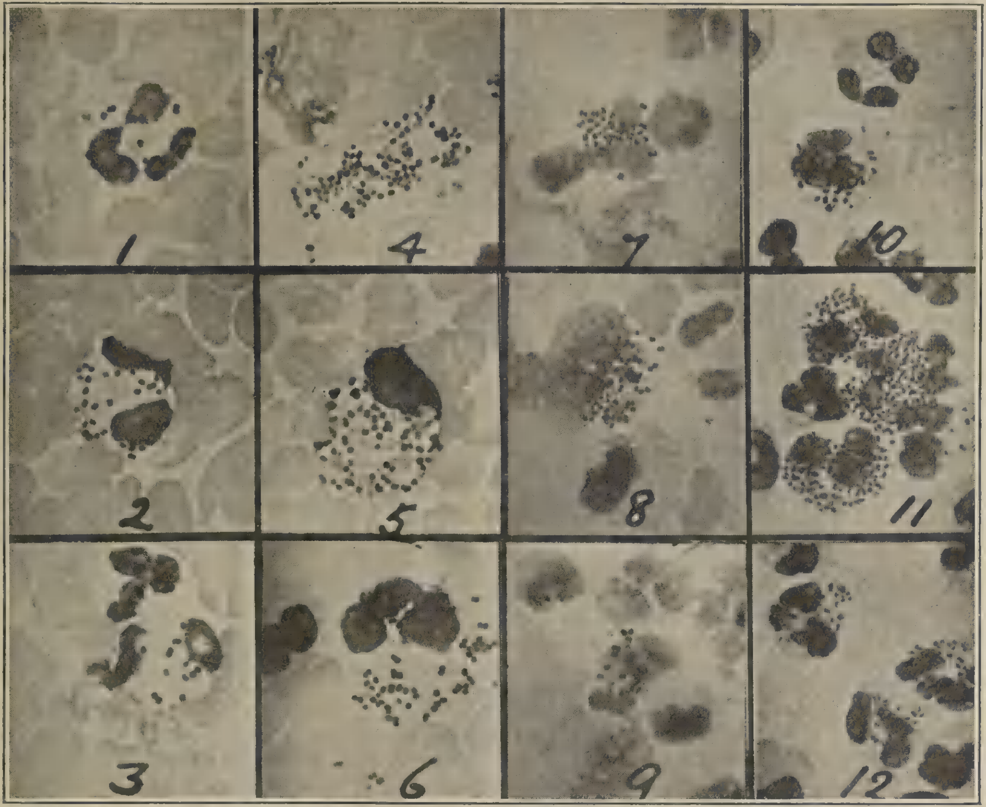
Clinically the case appeared to be a picture of profound septicæmia; there were no signs or symptoms to indicate the presence of meningitis. This latter condition was suspected mainly by the process of exclusion, and because the epidemic disease was known to be prevalent in certain military centres at the present time.

On March 17th, at 11.30 A.M., I made films from the blood obtained by puncturing the ear and procured about 20 c.c. of spinal fluid which had been drawn off on the previous day. The latter had a very slight deposit, which appeared to the naked eye to be almost entirely blood. On microscopic examination it was found to consist of red corpuscles with a few white cells, but no meningococci could be detected.

The blood films made from the blood of the ear were stained by Giemsa's method, and showed a moderate leucocytosis of about 12,000 to 13,000. A differential count showed the following percentage of leucocytes: Polymorphs, 80; large mononuclears, 19; lymphocytes, 1; eosinophiles, 0; in other words, the leucocytes were almost entirely polymorphonuclear, transitional, or large mononuclear types, many of which were vacuolated.

Whilst counting 2000 leucocytes, 10 were found to contain typical meningococci. Under a low power (8 mm. objective and compensating ocular 6) these appeared very much like deeply stained blue granules lying in the protoplasm of the cell, and when examined under the immersion lens they were found to be typical bean-shaped diplococci indistinguishable from gonococci. (I have carefully compared the meningococcus, or, to give it its full name, diplococcus intracellularis meningitidis (Weichselbaum), as found in the peripheral blood or in the cerebro-spinal fluid, with the gonococcus in urethral pus under a magnification of 3000 diameters, and I must confess that I can find no morphological difference. Both show considerable variations in size, but possibly the latter organism more frequently appears to lie in a capsule or vacuole.) The number of organisms lying in the protoplasm varied; in some cases there were only one or two pairs, in other cases the protoplasm was filled, but on an average there were about six in an infected leucocyte. (See microphotographs.)

With Giemsa's stain the meningococci stain a deep blue colour, but when there are many organisms lying in the protoplasm it is interesting to note that whilst the majority take the basic stain and appear blue, a certain number of them are faintly stained with the eosine and appear as very indistinct pale-pink bodies, but they still retain their typical bean-shaped character. Free diplococci were seen but they were infrequent, though occasionally a group consisting of several organisms was found.



Microphotographs of Meningococci and Gonococci. × 1000 diameters.

FIGS. 1 to 6.—Meningococci from peripheral blood showing variations in the number of organisms in the leucocyte. FIG. 4, free meningococci.
FIGS. 7, 8, 9.—Meningococci from cerebro-spinal fluid of another case of cerebro-spinal meningitis.
FIGS. 10, 11, 12.—Gonococci from urethral pus, showing the close resemblance of these organisms to meningococci.

The discovery of a comparatively large number of meningococci in films made from the peripheral blood suggests, to my mind, the following questions:—

1. As the cultivation of the meningococcus is a difficult and not very successful means of recognising the disease (Eisler has only obtained positive cultures from the blood in 10 out of 41 cases), are the organisms to be commonly found in films made from the peripheral blood in cases of cerebro-spinal fever, and is this a practical method of diagnosis, or are the meningococci only to be found in the septicæmic type of the disease?

2. As the meningococcus may occur in large numbers in the peripheral circulation, and as it is a very delicate short-lived organism very susceptible to drying, may not the disease be

conveyed by some blood-sucking insect? Dr. Edwards tells me that one of his very rapidly fatal cases complained of having been bitten on the back of the neck by a body louse a short time before his illness, *post* or *propter hoc*.

I would like to acknowledge my indebtedness to Dr. Edwards for permission to examine this case, for the clinical notes he has kindly supplied, and for his interest in my results.

Bournemouth.

INJECTION OF OXYGEN AS A TREATMENT FOR TETANUS.

BY H. O. HOWITT, M.D., L.R.C.P. LOND., M.R.C.S. ENG.,
AND
D. H. JONES,
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As B. tetani is an obligate anaerobe and will not develop in the presence of the smallest amount of oxygen, it was thought that the injection of oxygen into a tetanus wound, and into the tissue immediately surrounding the wound, would be more or less efficacious as a treatment, or auxiliary treatment, in delaying the onset of the disease or rendering it less acute, if not in preventing the development of the disease altogether.

In the *Canadian Medical Association Journal* for November, 1914, one of us (H. O. H.) reported beneficial results from the subcutaneous injection of oxygen in cases of dyspnœa of tuberculosis, gas poisoning, pneumonia, œdema of lungs, bronchial asthma, and operative cases, and the success with this treatment led to the surmise that it might be valuable in cases of tetanus and other anaerobic infections, such as malignant œdema, symptomatic anthrax, &c. The prevalence of tetanus infections, causing extreme mortality in the European war zone, made it appear probable that a few animal inoculation experiments with tetanus and the subcutaneous injection of oxygen might be of use in ascertaining whether the treatment was of any value in this connexion. Accordingly, Dr. G. C. Creelman, president of the Ontario Agricultural College, was asked if it would be possible to carry on the experiments with tetanus in the bacteriological laboratory of the College. Dr. Creelman readily gave his consent and referred the matter to one of us (D. H. J.) in charge of the laboratory. As a result, the following experiments were planned, in which we were respectively responsible for the oxygen injections and the cultures, inoculations, and subsequent observations.

Cultures used.—A fresh culture of B. tetani was obtained from the Parke Davis Co., and subcultures were made from this in dextrose beef-extract bouillon and dextrose beef-extract agar, incubated under anaerobic conditions at 37° C. for three days, and kept later at room temperature.

Virulence tests.—To test the virulence of the cultures a guinea-pig, weighing 790 grammes, was inoculated subcutaneously on the inner side of the right thigh with two drops of a three-day old bouillon culture. After 24 hours tetanic symptoms were shown by the extension backwards and outwards in a rigid condition of the inoculated leg. Five hours later respiration was laboured, and the hinder half of the body was partially paralysed, being dragged around the cage with difficulty; 12 hours later—a total of 41 hours from the time of inoculation—the animal was found dead.

Oxygen injection experiments.—The oxygen injected was obtained from some oxone cartridges as prepared by the Roessler and Hasslacher Chem. Co., New York, from which oxygen was generated in the portable oxygen generator made by the Hartz Company, of Toronto, Cleveland, and Detroit. The oxygen escapes by means of a long rubber tube, at the distal end of which is an aspirating needle which is inserted into the subcutaneous tissue. The tube is then oiled, and by a pumping action of the hand the oxygen is forced through the needle.

Series I.

In this series four guinea-pigs were used. They were divided into two pairs. All four were inoculated with B. tetani, and one member of each pair was given an injection of oxygen near the point of inoculation, while the remaining member of each pair was kept as a control. Sufficient oxygen was given to raise an emphysema from 3 to 5 centimetres in diameter in the immediate region of the point of inoculation. (*Note.*—In all the cases where tetanus developed the symptoms were similar to those described above in the virulence test, the only difference being the varying time of onset and termination of the disease.)

Pair 1, Guinea-pig 1 (*760 grammes—control*).—Inoculated subcutaneously with half a drop of an eight-day bouillon culture on inner side of right thigh. Result: Tetanic symptoms first observed after 36 hours. Convulsions and death after 72 hours.

Guinea-pig 2 (*760 grammes*).—Inoculated same as No. 1, but oxygen injected immediately after. Result: After 18 days no tetanic symptoms had developed; guinea-pig well, having shown but little inconvenience at any time.

Guinea-pig 3 (*840 grammes—control*).—Inoculated with one drop of eight-day bouillon culture. Result: Tetanic symptoms first observed after 30 hours. Convulsions and death after 46 hours.

Guinea-pig 4 (*720 grammes*).—Inoculated as above and given injection of oxygen immediately. Result: Tetanic symptoms first observed after 44 hours. Convulsions and death after 84 hours.

We see from the above that with the first pair of guinea-pigs where half a drop of culture was used for inoculation tetanus developed and terminated fatally in the case of the control, but had not developed where oxygen was injected 18 days later. With the second pair, where the amount of inoculum was double that used with the first pair, tetanus developed with fatal termination in both cases, but the appearance of tetanic symptoms and subsequent death were considerably deferred by the one injection of oxygen.

Series II.

For this series the agar-plate cultures were used. To inoculate, a puncture was made through the skin with a sterile sharp instrument, then a platinum needle was drawn through the surface growth of the culture and inserted into the wound. As with Series I., four guinea-pigs were used. They were divided into pairs, and one of each pair was inoculated and immediately given a subcutaneous injection of oxygen, and the other member of each pair was inoculated and not given oxygen.

Pair 1, Guinea-pig 5 (*630 grammes—control*).—Result: Tetanic symptoms first observed after 38 hours. Death followed tetanic convulsions after 66 hours.

Guinea-pig 6 (*700 grammes*).—Oxygen injected after inoculation. (*Note.*—Some of the oxygen injected bubbled outward through a drop of blood at the point of inoculation, indicating that the wound was being well bathed with the oxygen, which would thus be brought into direct contact with the bacteria and prevent their development.) Result: Tetanus symptoms first observed after 90 hours. Eight days after inoculation the pig was alive and active on three legs, and able to eat hay. The inoculated leg had been more or less extended and rigid for the last three days. It looked very promising for an ultimate recovery as though an active immunity was being established.

Pair 2, Guinea-pig 7 (*700 grammes—control*).—Inoculated. Result: Tetanic symptoms first observed after 36 hours. Death following tetanic convulsions after 50 hours.

Guinea-pig 8 (*840 grammes*).—Inoculated and given oxygen injection. Result: Tetanic symptoms first observed after 51 hours. Death following tetanic convulsions after 72 hours.

With this pair of guinea-pigs, as with the second pair in Series I., we noticed that while tetanus with fatal termination developed in both cases the time of onset of the disease and of death was much delayed by the oxygen injection.

We take it for granted that the reader is acquainted with the modern treatment of tetanus —e.g., use of antitetanic serum, hypodermic injections of dilute carbolic acid solution, anæsthesia for spasms, the darkened room, chloretone, &c.— but draw attention to the fact that the only treatment used in these experimental cases was the direct deep injection of oxygen into the wounds, and we assume that if the beneficial effects in these cited cases were due to the injection of the oxygen other anaerobic infections might be at least equally well benefited.

We do not say that these limited experiments prove conclusively that subcutaneously injected oxygen is a sure cure for tetanus, but we think the results obtained warrant their publication, and we feel justified, in view of the fatalities that are occurring in the war zone from tetanus, to call the attention of the medical men in attendance, and others, to the beneficial effects obtained from this treatment as in the above cases, with the hope that it may in some measure aid in the prevention of, or recovery from, the disease with the wounded.

A fuller account of the experiments will be published later, and further experiments are planned which it is intended shall be carried out in the immediate future.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

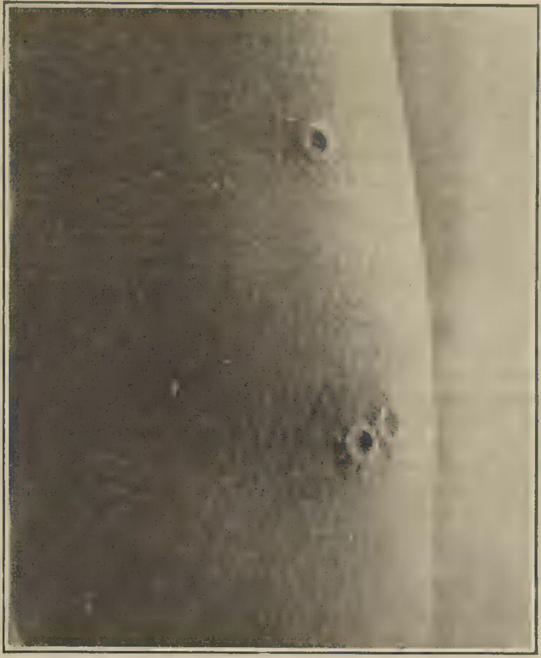
A CASE OF ANTHRAX.

By J. A. BENNETT, M.B., B.S. DURH.,
CAPTAIN, ROYAL ARMY MEDICAL CORPS.

ON account of anthrax being comparatively uncommon the following notes may be of interest to readers of THE LANCET.

History.—A driver in the R.F.A., age 30, was admitted to Connaught Hospital, Aldershot, with three pustules on his forearm. For about six months the patient had been working amongst horses and in stables, but had no recollection of having had any abrasions or the like. On March 3rd he noticed three spots on his forearm, two close together 2 inches below the end of the elbow, and the other 2 inches nearer the wrist. He felt "out of sorts," ascribing his condition to a cold, and it was on account of the latter that he reported himself sick on the 4th. The pustules had then the following appearance, small ulcers, ¼ inch in diameter (those shown in the illustration are slightly smaller than natural size), with elevated edges, the latter being due to small vesicles having coalesced and formed a complete ring surrounding a dry, depressed centre of a blackish-purple colour. Immediately outside this ring was an angry red area of about a quarter of an inch, on which were minute discrete vesicles irregularly concentrically placed. The whole skin of the forearm was indurated and inflamed. There was no febrile or constitutional disturbance of note.

Treatment.—After examination of many cover-glass preparations stained with watery methylene blue made from the pustules no B. anthracis were found, but as the appearance of the pustules was so suggestive of anthrax the patient was given an anæsthetic and the pustules were excised, including the vesiculated area. The raw surface left was cauterised with pure carbolic. Readily assimilated nutritious fluid nourishment and stimulants were given.



Pustules on the forearm in a case of anthrax.

Bacteriological examination.—Agar tubes and plates were inoculated with serous fluid aspirated from the pustules after excision, 24 hours' incubation showing a rich growth of staphylococcus albus, which obscured any other growths which may have been present; incubation was continued for three days. A flask of normal saline inoculated with some of the dense growth by means of a glass rod, and the saline emulsion was then heated at 85° C. for 30 minutes and stroke cultures made on agar plates from the latter. 24 hours' incubation of the agar plates showed numerous colonies of B. anthracis. To the naked eye and low-power examination the colonies were quite characteristic. Examination under 1/12th inch oil immersion revealed the characteristic B. anthracis.

Convalescence has been progressive and the man has been discharged from hospital feeling very fit.

I am indebted to Temporary Lieutenant R. Francis Jones for carrying out the bacteriological work, and to Temporary Lieutenant D. J. Legge for the surgical work.

South Farnborough.

VESICAL CALCULI IN VERY YOUNG BOYS.

By W. E. NICKOLLS DUNN, M.B. LOND.,
SUPERINTENDENT MEDICAL OFFICER, LUXOR HOSPITAL FOR NATIVES, UPPER EGYPT.

THE following brief details of two cases of vesical calculi in boys may be worth placing under the notice of readers of THE LANCET.

In the first case the patient, a plump little Arab boy aged 2½ years, was brought to hospital in November, 1911, because he was passing blood from the penis and his urine was constantly dribbling away. The sound entered the bladder with difficulty and there was no click heard. As the father of the boy was much upset at the child's screams the sound was at once withdrawn, and it was decided to take the patient in and examine him under chloroform. On the following day the child was duly anæsthetised. When the abdominal muscles were relaxed under the chloroform it was found that the fundus of the bladder lay just above the level of the umbilicus. The sounding of the bladder again failed to elicit any click, but the sound seemed to scrape against something as it entered the bladder. On passing a catheter only a few drops of urine escaped. An attempt was then made to distend the bladder with fluid, but without avail. The bladder was at once opened by the suprapubic route. No urine escaped, and it was found that the whole of the interior of the viscus was occupied by a smooth stone. My colleague, Dr. G. V. Worthington, grasped the bladder between his two hands and an assistant supported the stone with his finger in the rectum while it was being fractured with a mallet and chisel. Fortunately the stone was not a very hard one, but the pieces thus fractured were far too large to be withdrawn through the small wound in the bladder wall. A small lithotrite was then carefully passed around the side of the stone, between it and the bladder wall, and the female blade was slowly withdrawn until a portion of the fractured stone was grasped. An assistant then hammered the top of the supported lithotrite until the blades could be locked and screwed home. This manœuvre was continually repeated, and alternately the nozzle of an irrigator was introduced and the débris flushed out. Eventually the lower part of the bladder was by these means completely emptied. It was then thought that the rest of the stone could be pulled or pushed down from the upper portion of the bladder and more speedily dealt with. However, the stone fitted so tightly into the bladder that it was impossible to move it *en masse*, and it had to be carefully nipped off bit by bit by various kinds of forceps right up to the fundus. It took altogether two hours and a half to break up and evacuate the stone, the child being on the operating table two hours and three-quarters. For 48 hours after the operation the little patient was feverish and restless, but his subsequent recovery was uneventful. The surface of this stone was smooth and its colour brown.

The second case was that of a boy three years old who was admitted to hospital with a large stone on the same morning as the previous patient. The stone was a mulberry calculus, extremely hard and very irregular externally. The contrast between the two cases was remarkable. The boy in this case was in agony, owing to the roughness of the calculus; he neither ate nor slept, and was in consequence a living skeleton. The boy in the other case (whose bladder resembled a hard-boiled egg, the contents of the egg being the stone and the shell the bladder wall) experienced discomfort only and was quite robust in appearance. As in the former, so in this case the stone was crushed by hammering on the lithotrite, as it was too large to engage without this manœuvre, and subsequent flushing out of the débris through the suprapubic wound. The boy rapidly put on flesh and convalesced uneventfully.

In each case the wound in the bladder was left open and the edges were stitched to the abdominal wall. No tube was used and the bladder was irrigated twice daily with warm boric lotion. Urine was passed by the urethra in both cases on about the tenth day.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Exhibition of Cases.—Suppurative Parotitis after Pneumonia.

A MEETING of this section was held on March 26th, Mr. T. H. KELLOCK, the President, being in the chair.

Dr. F. E. BATTEN and Dr. W. H. VON WYSS showed a case of the Atonic Form of Cerebral Diplegia (Foerster). The child, aged 3 years, was the first of two children, born as a breech presentation after version. He had been weak from birth, and never able to stand or walk. He could sit up and hold his head straight. There was some kyphosis in the sitting position. He had difficulty in getting up because he could not balance properly. Instead of lying down he dropped down powerless according to gravity. He could move his arms and legs freely, but all his movements showed a great deal of incoördination. There was marked hypotonia of the feet, which could be bent on to the tibiæ. There were hyperextension of the knee-joints and a certain amount of hyperflexion of the hip-joints; also some flexor and adductor spasm. When suspended by the axillæ his legs were extended and rigid. There was hypotonia of the different joints of the arms. When placed on his feet he could not stand unsupported, and when he attempted to walk his legs performed incoördinate movements. The tendon reflexes were active. The abdominal reflexes showed a marked overflow, so that the thigh muscles contracted. The plantar reflexes gave a flexor response. The muscles responded normally to galvanism and faradism. The cranial nerves showed nothing abnormal. The intelligence was not bad, but he could not talk properly, though he understood everything said to him. The Wassermann reaction both in blood and cerebro-spinal fluid was negative, and the cerebro-spinal fluid showed no chemical or cytological abnormalities.

Dr. E. G. L. GOFFE showed four cases of Ichthyosis in a family of six children. The dry, scaly condition of the skin began to show itself about two months after birth in each of the children affected. Dr. Goffe also showed two cases of ichthyosis in a family of five children.

Dr. J. L. BUNCH showed a case of Ichthyosis associated with Long-standing Superficial Ulceration of the Tongue. The patient, a boy aged 12, had had generalised ichthyosis since infancy. Chronic glossitis with superficial ulceration had been present since birth, but varied in severity at different times. His mental capacity was somewhat deficient.

Dr. EDMUND CAUTLEY showed a case of Pulmonary Regurgitation in a girl aged 15 years. History of scarlet fever at nine years, and heart affection then recognised. Last August, and again in December, some pain and swelling in the hands and ankles. On Dec. 29th she took to bed on account of shortness of breath, for which she was admitted to the Metropolitan Hospital on Jan. 8th, the pain having subsided a week previously. During her stay in hospital there was no evidence of rheumatic fever, no fever, and no change in the cardiac signs. She was rather high-coloured, big, strong, and well developed. Her periods occurred every two weeks. Enlargement of the right ventricle was shown by percussion, cardiogram, and skiagram. Over the pulmonary area a long, loud diastolic murmur, most marked over the third and fourth left interspaces near the sternum, and 2 in. to the left thereof, then rapidly lost in all directions; sometimes heard faintly along the right edge of the sternum. There was no thrill. The pulse was rather small and had no "aortic" character, and varied from 68 to 100 per minute. A blood count on Feb. 12th yielded 5,270,000 red and 8600 white cells. All the facts appeared to support the diagnosis of simple pulmonary regurgitation, except that the skiagram indicated displacement of the apex a little downwards and to the left, as in aortic regurgitation, but there was no evidence of the hypertrophy usually associated with aortic regurgitation and such a loud murmur. Dr. Cautley also showed a case of Ectromelus with Absence of Pectoral Muscles on the Right Side, and one of Deformity and Wasting of the Hands with Deformity of the Feet.

Dr. E. A. COCKAYNE showed a case of Sclerodermia with Congenital Contractures and other Defects in a male infant, aged 1 year. Premature first child of healthy parents. First seen five months ago, and found to have congenital hydrocephalus, deformity of both ears, marked congenital contractures of the fingers and toes, and less marked contractures of both wrists, left elbow, and both knees. Contraction of the skin round the nose and mouth was also noticed. A Wassermann reaction proved negative. On Feb. 9th, 1915, the mother noticed that the skin on the outer sides of both thighs was very hard. This condition appeared suddenly and painlessly. There were large, symmetrical areas of thickened skin on the outer aspect of each thigh. The skin was not changed in colour, did not pit on pressure, and was not tender. The surface was nodular. The skin over the abdomen was affected similarly, but to a much less degree. Since it was first noticed there had been no change.

Dr. **Reginald Miller** showed a case of Inherited Syphilis with Wassermann Reactions in a boy, aged 2, well nourished. First child, no miscarriages, full term, breast fed. Father: Infected December, 1911. Treated at Lock Hospital with mercury until April, 1912; then two doses of salvarsan. Wassermann reaction not tested, as he failed to report. Reported in August, 1912, no fresh symptoms; a weak positive reaction. Received eight doses of mercury intramuscularly. In April, 1914, reaction negative. Mother: No symptoms throughout. Conception about June 24th, 1912. Child: Born March 22nd, 1913. At 5 weeks, epiphysitis of left elbow. Was treated with grey powder for seven weeks, combined with inunction (two weeks). Treatment then stopped for two months, owing to doubt in diagnosis. At 5 months he developed scaly rash on buttocks. Was given antisyphilitic treatment, including inunction, from fifth to fifteenth months; none since. Wassermann reactions of child and mother (full test): At 5 weeks, child and mother negative; at 5 months, child and mother positive; at 9 months, child and mother positive; at 11 months, child negative, mother (after salvarsan and mercury) negative; at 15 months, child and mother negative; at 23 months, child and mother negative.

Dr. **E. G. Fearnsides** showed a case of Chronic Polyarticular Arthritis commencing in a child at the age of 2 years 4 months. Until April, 1914, the patient was a healthy child. He was breast fed for 12 months, walked at 11 months, and began to talk at 13 months. In April, 1914, he became ill in himself and subject to attacks of sweating; shortly after this the small joints of his fingers swelled, his knees enlarged, and he became unable to walk. The child first came under Dr. Fearnsides's observation on August 28th, 1914. He was pale, flabby, wasted, unable to use his hands or to walk. There were considerable muscular wasting of the extremities, and great peri-articular swelling of the joints of the fingers, wrists, knees, and ankles, and apparently some enlargement of the bones. Lymphatic glands not enlarged, spleen could not be felt. He sweated freely. Tonsils were not enlarged. No abnormal signs could be discovered in the heart, lungs, or abdomen. Neither albumin nor pus in the urine. Under massage and grey powder by the mouth he had continuously improved. By November, 1914, he was again able to walk. The anæmia and the peri-articular swelling of the knees, ankles, wrists, and fingers gradually diminished. The Wassermann reaction in the serum was negative. At the present time a blood examination showed: red blood cells 5,450,000 per cubic millimetre, white blood cells 11,500 per cubic millimetre, hæmoglobin 64 per cent., colour index 0·8, with the differential count—polymorphonuclear cells 48·6 per cent., small lymphocytes 38·4 per cent., large mononuclear cells 10·4 per cent., transitional cells 1·2 per cent., eosinophiles 1·2 per cent., and mast cells 0·2 per cent. Dr. Fearnsides also showed a case of Pseudo-hypertrophic Muscular Dystrophy associated with Amentia in a boy aged 8 years. As far as could be ascertained there was no family history of myopathy. His father and mother were normal. The patient was the youngest of four children and the other three were healthy. In walking and mentally he had always been backward.

Dr. **Eric Pritchard** showed a case of Pneumothorax. A girl, aged 12 years, was brought to hospital on March 4th, 1915, for sudden breathlessness, with some cyanosis and pain in the left side of chest. She had complained of the pain off and on for three weeks, but had been going to school until the day she came to hospital. No cough and no previous illness. On examination nothing abnormal was found in the chest; the heart was slightly dilated, but otherwise in the normal position. Patient refused admission and was taken home. She continued to complain of the pain and was faint at times. Two days later she was admitted; temperature 100° F., pulse 104, respiration 28. Physical examination as before. She continued to complain at times of pain in the lower and posterior part of the left axilla, but was otherwise comfortable. On the fourth day the pain became severe, dyspnœa marked, colour pallid, temperature 103°, respirations 64, and pulse 136. The heart's apex beat was in the fourth right space about 1 in. internal to the nipple line. The left side of the chest was immobile and distinctly full under the clavicle. The note was hyper-resonant, breath soumds scarcely audible, vocal resonance and vocal fremitus absent; coin sound obtained. In four days' time the respirations had come down to 28 and the pulse to 96, while the temperature varied from 100° to 101°; the patient was quite comfortable. The note at the left base behind became dull, otherwise there was very little change in the physical signs.

Mr. **Philip Turner** showed a case of Hydrocephalus and Spina Bifida with Deformity of the Legs in a boy aged 2½ years, with talipes equinovarus of right foot and bowing inwards of the right tibia. Knee-joint in normal position; patella could be felt. There was talipes equinovarus of left foot also, but left thigh was externally rotated, so that the popliteal space was directed forwards. The tibia was still further externally rotated, so that the foot, though actually in a position of marked equinovarus, was rotated outwards and the sole directed forwards. Flexion of the knee was impossible, but hyperextension could be produced to an angle of 90°. The legs were not completely paralysed, though they could be moved but little. The child seemed intelligent, and the vision was normal. There was incontinence of urine and fæces. The X rays showed that bones were all present except left patella. The long bones were narrow, unduly slender, with enlarged and indefinite epiphyses. There was some evidence of periostitis of the left femur.

Dr. **J. Porter Parkinson** read a short paper on Suppurative Parotitis following Pneumonia in a boy, aged 3 years, in whom examination of the pus showed pneumococci and a few staphylococci. Recovery was uneventful.

Bradford Medico-Chirurgical Society.—A meeting of this society was held on March 16th, Dr. A. Manknell being in the chair.—Dr. F. W. Eurich gave a microscopical demonstration.—Dr. W. Mitchell read notes of a case of Urinary Incontinence in a female cured by a para-urethral injection of paraffin. The patient had sustained a rupture of the urethra during a very prolonged and difficult labour. Though the urethra had been sutured and the canal remained perfectly intact afterwards, the incontinence continued and made her life miserable. Dr. Mitchell then tried injecting paraffin with remarkable results, the patient being able to retain the urine from that moment, and no recurrence had taken place.—The case was commented on by Dr. T. J. Wood, Dr. A. Bronner, and Dr. Manknell, and Dr. Mitchell replied.—Dr. W. Wrangham read notes on two cases of Vertigo induced by intestinal parasites. Both patients were women and the symptoms were of short duration. In neither case could any cause be at first assigned for the symptoms. In one case a tapeworm was after a time discovered, and in the other several round worms. The symptoms of vertigo completely and abruptly disappeared in both cases after the worms had been evacuated. Dr. Wrangham thought that this was conclusive evidence that the vertigo was due in some way to the worms.—Dr. H. J. Campbell drew attention to the numerous drugs now on the market that are being used indiscriminately as purgatives by the public, who seem to think that any drug credited with an action on the bowels is suitable for any and every case. He reviewed shortly the action of the different purgatives and explained the principles guiding selection of a certain drug for a particular case. Broadly speaking, he said, purgatives could be divided into vegetable and mineral, the former being more generally useful in early life and the latter after middle age. The vegetable drugs acted on a normal bowel and all along the bowel There was no absorption, their action being entirely on the epithelial cell. The mineral drugs, on the other hand, acted on a bowel more or less overloaded with food and exerted their influence on the vessels, the action being that of bleeding the patient into his own bowel. Great care and discrimination were required in the use of purgatives, and much harm was being done by the increasing abuse of them, which is growing to such an alarming extent amongst the public.—Dr. Wood and Dr. Wrangham discussed the paper, and Dr. Campbell replied.

Reviews and Notices of Books.

A Surgeon in Belgium.

By H. S. SOUTTAR, F.R.C.S. Eng. London: Edward Arnold. 1915. Pp. 217. Price 8*s*. 6*d*. net.

Mr. Souttar was until recently surgeon-in-chief to the British Field Hospital for Belgium. This hospital started work in Antwerp, and when driven out by the fall of that city moved to Furnes, a little town about 15 miles east of Dunkirk. From there, owing to the German advance, it moved to Poperinghe, about 15 miles south of Furnes in the direction of Ypres, and finally it was moved back to Furnes, where it still was in January of the current year. Anyone who wishes to read a tale of simple, unaffected heroism on the part of patients, doctors, nurses, bearers, and non-medical helpers, priests, nuns, and the incomparable lady whom Mr. Souttar calls "Madame," had better read this book at once. It is written in simple easy English, it is vivid and informing, and its pictures of the absolutely wanton and purposeless devastation wrought at Louvain, Termonde, Ypres, and other places should bring home to everyone for what a righteous cause we and our Allies are fighting and what a practically unpayable debt we owe to Belgium.

As to the purely professional work of the hospital it was very successful, and one great element of success was, as Mr. Souttar says in his chapter "Some Conclusions," that the hospital being "always close to the front, we received our cases at the earliest possible moment, and could deal with them practically first hand." Naturally nearly every wound was infected and generally soiled by "earth, manure, fragments of cloth covered with mud." In Mr. Souttar's experience, however, infection with tetanus and other virulent organisms was rare. Many of the wounds were excessively foul and these were treated by solutions of oxygen, and when protected with a thin piece of gauze, by being exposed to the open air, "the results were almost magical, for in two or three days the wounds lost their odour and began to look clean, while the patients lost all signs of the poisoning which had been so marked before. It may be partly to this that we owe the fact that we never had a case of tetanus."

An interesting phase of modern war surgery is the manner in which severe compound fractures were treated. Many of these were fractures of the femur, with a large infected wound, and several inches of the bone blown clean away. At first these cases were regarded with horror, splints proved unmanageable, the wounds had to be dressed, and any movement meant agony for the patient. So Mr. Souttar and his colleagues took to applying steel plates, and this somewhat bold stroke met with deserved reward, for, in Mr. Souttar's words, "Not only could the limb be handled now as if there were no fracture at all, to the infinite comfort of the patient, but the wounds themselves cleared up with great rapidity." So well did they do, that on the night of the bombardment of Antwerp one patient who had been operated upon for this condition only ten days previously walked downstairs with the aid of a dresser's arm.

The case narrated on p. 16 is a wonderful example of what good prompt surgery will do for a man with pluck and a sound constitution. The war has given rise to many instances of heroism and self-sacrifice, but perhaps to none finer than this of the Belgian officer who, with a hideous shell wound of the abdomen, dragged himself and a wounded companion for nearly a mile, crawling on his hands and knees. When too exhausted to drag his friend any more he left him under a hedge and managed to crawl for another half a mile, when he obtained help. At death's door he was brought to the hospital and treated, part of the operation consisting in making a short circuit. Three weeks later he was left in Ghent "to all intents perfectly well."

As journalists, too, our hearts go out to our colleague, "the editor of a well-known sporting journal in England." He was serving as a machine gunner on an armoured car and got shot through both tibiæ when standing at the back of the car. The driver not realising this started the car, whereupon the editor just had time to catch hold of one of the rear springs, and in this position, with two broken legs, he was dragged along the road for half a mile. When found he was unconscious and bruised all over. He was brought into hospital and did well.

Not only can Mr. Souttar write well on professional matters, but he has the power of making the devastation of war seem very real. For instance, of Termonde, the town which the Germans deliberately burned, he says: "No words can ever convey any idea of the utter destruction of the whole town or of the awful loneliness by which one was surrounded. One felt that one was in the presence of wickedness such as the world has rarely seen, that the powers of darkness were very near, and that behind those blackened walls there lurked evil forms. ...... One could almost hear the Devil laughing at the handiwork of his children."

We will end our notice of a first-rate book by giving an anecdote told by Mr. Souttar as a counterpoise to the heavy weight of wickedness accumulated by the Germans in their treatment of Belgium. The story is told at p. 197 and is shortly this. About half a mile out of Pervyse was a farm held by a Belgian outpost, and half a mile beyond this were two other farms held by Germans. One morning news was brought to Pervyse that some of the men at the outpost had been injured. Nothing could be done till nightfall as the road (the only one across the flooded land) was swept by German guns. Then two priests went out to the farm where they found the wounded beyond their powers of carriage. They went on to the farms in the enemy's occupation and asked for help. We give the rest of the story in Mr. Souttar's own words: "A few minutes later the astounded Belgians saw a little procession coming up the road. In front walked the two priests, and behind them came four wounded Belgians, lying on stretchers carried by German soldiers. They came right into the lines and they had a royal welcome. They all shook hands, and the little party of Germans walked back down the road amid the cheers of their opponents." Such deeds as this throw a light amid the dark places of war.

Surgical Materials and their Uses.

By ALEXANDER MACLENNAN, M.B., C.M. Glasg., Visiting Surgeon, Royal Hospital for Sick Children, Glasgow, &c. With 277 diagrams and illustrations. London: Edward Arnold. 1915. Pp. 252. Price 4*s*. 6*d*. net.

THIS little book is based on lectures given to students of the Western Infirmary, Glasgow. It includes an account of the various bandages, splints, dressings, sutures, and ligatures; also the methods of antisepsis and asepsis are described; and it closes with a description of most of the instruments employed in surgery. It contains, therefore, much that should be very useful to the student, the house surgeon, and especially to the practitioner who wishes to keep abreast of the ever-advancing tide of knowledge. The author, while describing the most recent methods, has not omitted some of the more classical ones, which are indeed still practised by some surgeons.

The book is very practical in its teaching, and evidently records the experience of a surgeon who is particularly attentive to details in his work—a matter of the greatest importance in surgery. With nearly all that he says we cordially agree, but we cannot quite concur in the statement that instruments which take to pieces should be avoided. The author tells us that such instruments are liable often to fall apart when least desired. This is to a certain extent true, but the tendency to fall apart at inopportune moments will rarely be exhibited if the locks are well made. Instruments fixed by a screw can be as efficiently sterilised by boiling as the others, but it is very difficult to remove blood or other material which makes its way into the joint.

Clinical Diagnosis: A Manual of Laboratory Methods.

By JAMES CAMPBELL TODD, Ph.B., M.D., Professor of Pathology, University of Colorado. Third edition, revised and enlarged. Illustrated. London and Philadelphia: W. B. Saunders Company. 1914. Pp. 585. Price 12*s.* net.

IN the review of the second edition[1] this book was welcomed as one likely to be useful to the clinical pathologist; that this has proved to be the case would seem to be indicated by its rapid appearance in a third edition. The book has been enlarged by some hundred pages and a considerable amount of new material has been added, while the original material has been carefully revised.

The practical character of the work is insisted upon by the author, and it is based on experience gained in teaching. This experience leads the writer to the conclusion that the majority of the errors of students arise from an inability to use their apparatus properly or from failure to recognise artefacts, rather than from ignorance of typical structures when properly displayed. In this most teachers would agree. The chapter on the use of the microscope has therefore been enlarged and a set of practical exercises has been added to assist the student to meet these difficulties. As a further help to the learner use has been made of variations in size and character of type, not only for the headings of sections, but also in the text to attract attention to important points in the subjects treated. The section on the urine, always an important one and one containing methods not usual in English laboratories, has been completed by the addition of a simplified Volhard test for chlorides, the urease method for detecting urea in urine, blood, and cerebro-spinal fluid, the Rimini-Burnam test for formaldehyde, and the phenol-sulphone-phthalein test for estimating the functional activity of the kidney. The section on the cerebro-spinal fluid, which in the second edition was rather scanty, has now been rewritten and is considerably enlarged and improved. Sero-diagnostic tests were not entirely neglected in previous editions, but these tests and the methods employed in carrying them out now form a new and important chapter which has been contributed by Dr. Ross C. Whitman. The complement-fixation tests for gonorrhœa, tubercle, cancer, and syphilis are given, and the cobra venom test for syphilis and Abderhalden's protective ferment test are included. With regard to the value of Abderhalden's test criticism is not only deprecated, but somewhat fiercely resented, but we may at least express doubts as to the wisdom of including such a test in its present stage of development and with its acknowledged difficulties in a text-book avowedly intended for the practitioner and student, rather than for trained laboratory workers.

Further tests have been added in the section on the gastric contents, and several new staining methods are given. The illustrations, which are chiefly reproductions of microphotographs, have been increased in number and in some cases replaced by better plates, while the original frontispiece has been changed for a plate showing varieties of blood cells. The printing, paper, and general appearance of the book are good, and the edition is a decided improvement on the previous one.

The Alimentary Tract. A Radiographic Study.

By ALFRED E. BARCLAY, M.A., M.D., B.C. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., Medical Officer to the X Ray and Electrical Departments, Manchester Royal Infirmary, &c. With 77 illustrations. London: Sherratt and Hughes. 1915. Pp. 195. Price 12*s.* 6*d.* net.

THE work of Dr. Barclay with the X rays in the investigation of disorders of the digestive system is so well and favourably known that it gives us no surprise to learn that the edition of his last work, "The Stomach and Œsophagus," was very quickly sold out. In the volume now before us the above work forms the basis, though it has been enlarged and altered in keeping with subsequent experience. This has gradually taught the author that in dealing with disorders of the digestive system it is no longer possible to consider one part as distinct from the others; that the various parts from the cardiac orifice to the pelvic colon are so intimately associated with each other through their nervous mechanism as practically to constitute one organ, and that referred signs and symptoms are the rule rather than the exception. Merely to demonstrate the presence of a gastric or duodenal ulcer is now no longer sufficient, and in Dr. Barclay's opinion these are most often secondary manifestations of disease elsewhere. Thus it has become necessary to extend this volume so as to take in the whole of the alimentary tract. The subject is as yet far from being worked out to finality, if, indeed, it can be said that we are not near the beginning; and this study of radiography will be no more than one of the milestones on the way, though a very important one.

All through this book we are impressed by the judgment with which observations are recorded and by the care taken in the conclusions to be drawn therefrom, the author being his own most severe critic while a generous one to the opinions of others. In dealing with the subject of the ileo-pyloric reflex he confesses himself unable to recognise Lane's kink radiographically, or to regard it as a cause of either ileal stasis or of this ileo-pyloric reflex—an interesting remark considering how much has been said on this matter by some radiologists.

It would serve no purpose to pick out any part of the book for special remark; it is one that must be studied as a whole, and if it shows some lack of system in its arrangement, this is easily accounted for by the transitional stage through which our knowledge is passing. We advise those interested in disorders of the digestive system—and that must surely include all medical practitioners—to study this book carefully.

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[1] THE LANCET, 1912, vol. ii., p. 156.

JOURNALS.

Quarterly Journal of Experimental Physiology. Editors, E. A. SCHÄFER, W. D. HALLIBURTON, C. S. SHERRINGTON, E. H. STARLING, and A. D. WALLER. Vol. VIII., No. 4. London: Charles Griffin and Co., Limited. 1915. Pp. 303-397. Price 7*s.* 6*d.*—Researches on the Perfused Heart: Some Effects of Sodium Chloride, by W. Burridge. This is a very elaborate, well-illustrated, and illuminating contribution. It is well known that the perfusion of isotonic sodium chloride through the frog's heart leads to its arrest in diastole and loss of electrical excitability, and that isotonic sodium chloride is not an indifferent substance for muscle. The author, whose experiments were made on the frog's heart, shows that sodium chloride has an action in determining the sensitiveness of the reactions of the heart to a given concentration of calcium salts. An active displacement of calcium salts by sodium is a factor in the production of the diastolic failure which follows perfusion of isotonic sodium chloride through the frog's heart. The salts of sodium and calcium are antagonistic in regard to their mutual adsorption on the surface of certain of the heart colloids (surface effects); they are antagonistic in regard to the changes in the state of aggregation each induces in those same colloids (deep effects). The state induced by calcium is one unfavourable to its own activity in its function of tonus production; the state of aggregation induced by sodium favours these latter functions of calcium. The favouring action of sodium on these calcium functions outweighs its antagonism. Hence, if the amount of sodium chloride in a perfusing solution be increased, the effective action, in certain directions, of the calcium salts already present in that solution will also be increased, but at a distinctly later period, and *vice versâ.*—On the Relation between Calcium Salts and Alkalies of the Perfused Heart, by W. Burridge. That traces of alkali in the perfusing fluid cause arrrest of the frog's heart in the systolic phase is well known. The author finds that: 1. The increased tonus which follows the addition of traces of alkali to a solution perfusing the heart is dependent on the calcium salts in the perfusing solution. 2. It is suggested that this action of the alkali is mediated by a change in the state of aggregation of some of the heart colloids. 3. It is shown that the action of the alkali in inducing changes whereby the effective action of a given concentration of calcium in producing tonus is increased is antagonised by calcium salts. 4. It is suggested that calcium salts induce a state of aggregation in certain heart colloids which is unfavourable to their own activity in producing tonus. 5. It is shown that alkalies first prolong and then shorten the refractory period of the heart, and that a marked summation of contractions is made possible.—Experiments on the Effect of Low Temperatures on the Frog, by A. T. Cameron.—On the Movements of the Isolated Small Intestine and the Action of Various Drugs and Extracts upon Them, by Alexander Waugh Young. The gut of the cat was found most suitable. Pieces of a certain length were placed in a modified Ringer's fluid and the movements recorded. The method employed for these isolated pieces of intestine was a modification of that of Magnus. A large number of substances were studied. We only refer now to a few of them. Carbon dioxide has an inhibitory action on both the tone and movements of the intestine. If the action of CO_2 is prolonged the intestine is permanently injured and eventually killed. Hyoscyamine has a stimulating action; it can initiate the movements when they are absent. The pendulum movements are increased in size and made more regular, the tonus oscillations being partially or completely abolished. Stimulation is seen with 0·001 per cent. of concentration. Hyoscine has an action similar to that of hyoscyamine, but it is weaker, 0·02 per cent. being the weakest concentration having a distinct action. Both drugs inhibit the stimulation produced by pilocarpine. Cocaine has a stimulating action in strength from 0·001 per cent. to 0·01 per cent.; with higher concentration no stimulation is seen, but a marked regularising effect then appears; with 0·2 per cent. a paralysing of the intestine comes on. Inhibition of the action of pilocarpine does not occur. Choline produces a marked rise of tone in the isolated intestine; this occurs with a concentration of 1 in 50,000; with high concentration the pendulum movements are obliterated. Atropine inhibits the action. There is also mutual antagonism between the actions of choline and adrenalin. Neurine in its action resembles choline, but is more powerful; 1 in 100,000 produces an effect. Watery extract of the posterior lobe of the pituitary body has the effect of raising the tone and causing the development of large tonus oscillations. The action occurs only with high concentrations; thus two glands per 100 c.c. of Ringer's solution is the weakest extract to give definite results. Alcoholic extract has no action. Hemisine causes inhibition of the movements and lowering of the tone of the intestine; 1 in 10,000,000 produces a small but distinct effect. Extracts of spleen, thyroid and thymus, pancreas, liver, kidney, and brain give no definite results. Stomach contents inhibit the movements by their acidity alone. The contents of the small intestine have often a marked stimulating effect apart from, but to a considerable degree influenced by, their reaction. Extract of digesting gastric mucous membrane and of mucous membrane of small intestine, and also secretin, have, when neutralised, no definite action. Pancreatic secretion increases the tone. Indol inhibits the movements and lowers the tone. Bile has a similar action.—The Mode of Action of Pituitary Extract on the Mammary Gland, by Sutherland Simpson and Reuben L. Hill. The galactagogue action of the posterior lobe of the pituitary body (pituitrin) in lactating animals is now well recognised. If the action, which occurs 20 to 30 seconds after injection, is on the smooth muscle the result would be due to expulsion of the secretion already in the gland rather than to increased secretion. Two lactating bitches were used. The authors conclude that the flow of milk which follows the injection of pituitary extract is due to the action of the extract on the secretory mechanism of the gland and not on its muscular tissue, since barium chloride, which is a specific stimulant for muscle, produces no increase in milk flow. It is conceivable that the barium salt may inhibit the secretion of milk, although no such action is claimed for it; but this supposition is ruled out by the fact that the gland responds actively to pituitrin within three minutes after the injection of barium. E. A. Schäfer adds a note on the paper of Simpson and Hill. He favours the view that the complete emptying of a gland which obtains after an adequate injection can best be explained by supposing the existence of contractile tissue in the walls of the alveoli.—The Pyramidal Tract in the Striped Gopher (Spermophilus Tridecemlineatus—Mitchell), by Sutherland Simpson. We must refer the reader to the original paper, and the same must apply to two short papers on the Lipoid Content of Vascular Epithelium and of Peritoneal Epithelium by John Tait and William Campbell.

British Dental Journal.—In the March 15th issue of this journal there is an interesting paper by Mr. C. E. Wallis on Ancient and Modern Dentistry. He tells us that "extraction" was first recommended about the year 1300 B.C., while he refers also to the skill displayed by the Etruscans in the manufacture of gold dental bridges and similar appliances to replace lost teeth. He points out the influence of Fauchard, Heister, and Moaton on modern dentistry, and deals with the introduction of nitrous oxide. In a paper on Toxæmia of Oral Origin, Sir Rickman Godlee utters a word of warning against the reckless removal of all the teeth in cases of general disease suspected to be due to mouth infection. There is a paper by Mr. C. Every Brown on the Treatment of Sensitive Cavities.

DONATIONS AND BEQUESTS. — The late Mr. William Richmond has left his residence and grounds at Lancaster to the Royal Lancaster Infirmary and, subject to certain devises of real estate and legacies to relatives and friends, the net residue of his estate will be paid over to the trustees of the infirmary for founding, endowing, and maintaining a convalescent home to be called the Richmond Convalescent Home.—The late Mrs. Elizabeth Ellen Hopkinson, of Chesterfield, Derbyshire, has left by will £1000 to the Chesterfield and North Derbyshire Hospital and Infirmary.—The late Mrs. Elizabeth Winstanley, of Southport, has bequeathed £1000 to the Chorley Dispensary and Rawcliffe Hospital, Gillibrand-street.

THE LANCET.

LONDON: SATURDAY, APRIL 10, 1915.

The Medical Needs of the Army.

THE appeal of Sir ALFRED KEOGH, Director-General of the Army Medical Service, for medical men to meet the needs of the army[1] has not, we fear, been met with quite the alacrity which it deserved, though we have his acknowledgment that a very satisfactory number of applications have been received. That more men have not as yet applied has been due, perhaps, to the fact that the forms which are supplied from the War Office to qualified medical men wishing to obtain a medical commission in the Royal Army Medical Corps are not as informing as they might be, and certainly to the other fact that no special mention was made of the possibility of the employment of part-time service. Sir ALFRED KEOGH'S description of what he looked for was perfectly clear and simple, as far as it went. "We want," he said, "every qualified man who is physically fit and willing to serve." He mentioned the special need for general practitioners, though immediate employment could, he added, be given to all suitable men, "expert surgeons, ophthalmologists, radiographers, &c." The Director-General stated plainly that the emergency was a national one, and that while there was no desire to denude the country of civil practitioners, he hoped that every man who could arrange to have his work done at home would come [forward at once to keep up an adequate supply of medical service in the field.

We have had many communications arising directly out of Sir ALFRED KEOGH'S appeal, while we know that not only our contemporary, the *British Medical Journal*, but also many lay papers have similarly received letters from medical men desirous of helping, but uncertain how they could do so exactly. Those who were prepared to accept whole-time service were confused by the different conditions for commissions in the Royal Army Medical Corps and for Territorial commissions, and letters which have found their way into the press have not cleared up the difficulties. The three varieties of commissions available—viz., the two indicated and the R.A.M.C. Special Reserve—present differences in pay and employment which are not so easy for the layman to deal with as the military mind might conceive, but at the same time we are bound to say that we think many of the medical men who are anxious to serve would find these difficulties could be got over, if they were willing not to hedge their offers round with too close reservations. We know that many such medical men, however, must be prepared to make large sacrifices. What we would urge them to believe is that the War Office is only too anxious to obtain their assistance, and fully recognises that, in many cases, their aid must be forthcoming at both certain loss and possible risk to themselves. There has, moreover, been a widespread feeling, and one which has been openly alluded to in our columns, that in certain localities our forces were not only well supplied but over-supplied with medical officers, so that what was required was perhaps rather a re-sorting of material than the recruiting of new men. In Scotland, largely through the energy and initiative of Dr. NORMAN WALKER, the convener of the Scottish Medical Service Emergency Committee,[2] there has been a brave attempt at organising the medical profession in such a way that those who joined the army should have their interests cared for by their brethren remaining behind, a certain proportion of the pecuniary risk run by those who were with the colours thus being obviated; but hitherto in England no attempt of the kind has been made. These are the things which have possibly kept many very suitable medical men from responding immediately to Sir ALFRED KEOGH'S appeal, while the inability, apparently, to make use of the part-time services of the general practitioner has also helped to leave the army short-handed. The following is an extract of a letter which we received this week, and which we reproduce because it exactly expresses the feelings of many general practitioners:—

> "I am wondering," writes a valued correspondent, "what is likely to be in process of arrangement *apropos* of the dearth of doctors and the possibilities of having to make use of part-time service men. I cannot leave my practice, but I should be glad to be useful if possible by giving certain hours on certain days or indeed every day. In order to meet the emergencies of general practice I could arrange with a neighbouring doctor, a friend, that one of us would be always available at arranged times within some reasonable distance of the road in which we live, to carry out medical duties under orders. I have no doubt there are many situated as I am, with no experience of the military side of the R.A.M.C., who are only awaiting the chance of making themselves useful in this emergency."

There were, as our correspondent guesses, many practitioners whose thoughts were running in exactly his own grooves. Doubt as to the conditions of military service, doubt as to the real need for their help, and doubt as to the possibility of giving to the army a part of their professional time—these things accounted for many abstentions.

Such was the position when just before Easter it was decided by the British Medical Association to invite Sir ALFRED KEOGH to a conference with a special committee of the Association. The Director-General accepted the invitation, and, accompanied by Colonel A. P. BLENKINSOP, the Assistant Director-General in charge of questions of personnel, met the committee of the British Medical

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[1] THE LANCET, March 13th, 1915, p. 572.

[2] THE LANCET, August 22nd, 1914, p. 530.

Association on Thursday, April 1st, when he made a statement which should, in our opinion, go far to clear up the existing difficulties. Dealing in the first place with the widespread conviction that there was an abundant surplus of medical officers in some places at home, he pointed out that such surplus was only apparent, and that there was a place for every one of the men now holding commissions to serve with units which would be sent abroad probably in a very short time. He assured the meeting that when everything that distribution could effect had been done, there would remain a serious shortage of whole-time medical officers to serve with the troops wherever they might be sent. He then made the statement, which appears on p. 775 of this issue of THE LANCET, wherein, while warmly acknowledging the assistance already received from the civil medical practitioners of the country, he accepted the fact that the help now required must be given upon the part-time principle. Mr. T. JENNER VERRALL, the Chairman of Representative Meetings of the British Medical Association, promised that the Association would do all in its power to arrange some scheme of mutual aid, while medical men have before them the excellent example of the Scottish Medical Service Emergency Committee as a guide. We feel certain that medical men who respond to Sir ALFRED KEOGH'S repeated invitation to apply to the War Office, if they desire to help the country at this juncture, will find that any doubts they may have as to the conditions of service will be removed. The conditions may call upon their patriotism, but they need not also be a puzzle to their intelligence.

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Convalescence and Sick Leave in the Army.

EARLY in the war a wave of pity led many to prepare to do their best for wounded soldiers. Throughout the kingdom in private dwellings preparations were made for the reception of small numbers of men, in pathetic ignorance of the difficulties that might be encountered if they ever arrived. Our benevolent citizens could scarcely be expected to realise that the cordiality of their move might be embarrassing or even unwelcome to the authorities. The offer of kindly treatment, of good food and surroundings, and of personal devotion seemed to mean so much when freely tendered that officialdom was blamed unjustly when the days passed without any tangible recognition. Numbers of wounded arrived in this country, were treated in hospital, and then, so far as the members of the public were aware, they were sent out on sick furlough and returned to their homes, where the conditions must frequently be far from the ideal of convalescence. In the near future the pressure on the accommodation available at the hospitals will induce a natural tendency to discharge the wounded or sick soldier on sick leave at the earliest moment possible, but it will be mainly to convalescent institutions that he will go. Private hospitality is too devoid of regulation to be useful, while the unsatisfactory nature of the food in the homes of the soldiers on sick furlough makes reception by their families inadvisable.

There is perhaps no subject upon which medical advice is more frequently sought than the question of the best method of bridging over the interval which must occur between the bed of sickness and the activity of daily life. For ordinary patients this interval is half way between the control of the physician and the resumption of whatever free will is permitted by the ordinary occupation. During the interval the control of authority is relaxed to some extent, while by degrees the convalescent man feels that, with returning strength, he is fit to run alone. Though the control is relaxed advice is desired. The medical man is asked where the time of convalescence should be spent, how the days should be occupied, what treatment, if any, should be continued, what rules of life should be followed. The answers to all these questions are dependent on the nature of the previous illness, and to a great extent they must vary with the circumstances of the patient. In general terms it may be thought to be sufficient to advise a convalescent home for those who have been inmates of hospitals. Further inquiry, however, soon shows the limits of this panacea. Many convalescent homes rigidly restrict the class of patients to be admitted; apart from questions of surgical dressings or continued surgical treatment, it is often found that the patients in convalescent homes are required to be able to perform various personal services. For those more happily circumstanced, medical men are asked to consider whether the time of convalescence is to be spent at some specially selected place, or whether it may not be more conducive to quick recovery for the patient to go to friends living in the country. Undoubtedly sympathy and kindly intercourse are factors which must often be reckoned with. They are of inestimable service when they tend to distract from the memories of the period of danger; they may be positively harmful if, through lack of tact, they encourage gloomy reminiscences.

The soldier on sick furlough occupies a position which is scarcely comparable to that of a civilian. It may be assumed that his wounds or illnesses have not been sufficiently disabling to remove all hope of future service, and it therefore is desirable, in the interest of the nation, that he should be restored to efficiency at the earliest date. On the other hand, if he is one who has returned from foreign service he has earned a furlough which he might legitimately desire to spend with his wife and family. Provided that this can be accomplished without impairing his efficiency, the dictates of humanity would offer no obstacle. Speedy restoration must, however, be the first consideration, and for this it must, we think, be freely admitted that the life of routine in a suitable convalescent home offers the best prospects. The home would require to be under military discipline, since the cheeriness of the convalescent soldier might be misunderstood and even be troublesome in a home where civilians were received. With judicious management and understanding the convalescent soldier is a most delightful being, but he requires just a little control occasionally, and to be effective this control must be exerted by someone whose authority he respects. The difficulty of arranging for continuous supervision is perhaps the reason why so many of the offers of convalescent treatment have not been accepted by the authorities at the War Office. It might perhaps be possible to arrange for a non-commissioned officer to be responsible for due observance of regulations in small convalescent homes, but it is probable that more satisfactory results would be attained by the formation of larger homes, which should be under the management of permanent officials with military rank. On leaving such homes the men should be physically fit for service and should only be entitled to such further furlough as is necessitated by their work in the front. While under convalescent treatment in a home, or while on furlough subsequently, there can be no doubt of the importance of a sufficiently liberal diet or of strict limitation of alcohol.

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Compulsory Notification of Measles, Rubella, and Whooping-cough.

A CIRCULAR which has been issued by the Local Government Board to local authorities states that the central department is willing, on the application of any sanitary authority, to make compulsorily notifiable the first case of measles, German measles, or whooping-cough which occurs in a household in the district concerned. It becomes important, therefore, to consider the advantages which the adoption of local notification of these diseases is likely to secure.

It is not at all probable that notification can lead to much diminution in their prevalence or in their regular recurrence at epidemic periods. All three diseases are highly infectious during the days before the characteristic symptoms lead to medical aid being called, and the ability to infect will in most cases have been freely exercised before any intimation can have reached the local authority. The notification of measles has, in fact, been tried in a large number of areas in the past, and in many cases has been abandoned on the ground that no appreciable impression was made on the figures of measles prevalence, and that no obvious benefit resulted from the considerable sum spent on notification fees. Judged by the standard of prevalence notification of whooping-cough and of rubella would probably be equally disappointing. There is, however, another side to the case. Taking the 1912 return of the Registrar-General for England and Wales as an example, measles caused 12,756 deaths in the year and whooping-cough 8407 deaths, and these figures were not exceptionally large. Local health authorities and the public generally have become alive to the seriousness of the measles and whooping-cough factors in the death-rate, and besides this are realising the large amount of invalidity, particularly that due to ear mischief, which results from the complications of measles and secondary septic infections. The frequency with which tuberculosis supervenes on attacks of both diseases is also well known. In respect of fatality and of complications there is a very striking contrast between children of more well-to-do parents—who can be isolated in airy rooms, receive adequate medical and nursing aid, and be well looked after and fed during convalescence—and the children of working-class households who are usually under much less favourable conditions. Public health authorities can set themselves to reduce the handicap of the latter class. Owing to the numbers concerned routine treatment of measles in isolation hospitals is hardly practicable, though these hospitals should be available for special cases. But much can be done by systematic and frequent domiciliary visits of trained nurses, and by health visitors under medical supervision, to see that in working-class homes the best available conditions are secured during illness and convalescence, and that medical advice and other practical assistance are obtained where needed. Authorities prepared to make arrangements on these lines will find the adoption of compulsory notification of great assistance to the work.

The system in the case of measles, rubella, and whooping-cough is, however, exceptional in that no approach to completeness can be expected unless parents themselves accept the obligation to notify. As a strict matter of law, parents are already liable under the Notification Acts, in addition to the medical practitioner, for notification of the diseases to which these Acts apply, but in practice this obligation has seldom been enforced or recognised to be binding. It will be important to ascertain by experience how far notification by parents can be successfully pressed in regard to the diseases here in question, as it may well be the case that the children needing the greatest amount of attention will be found in households where notification requirements have been neglected.

BY the will of the late Mr. George Stowell, of Great Torrington, the testator left, subject to the life interest of his wife, £1000 to the trustees of Epsom College upon trust, to pay the income for one year to a boy, who shall have been educated at the school for five years, to enable him to further his training.

Annotations.

"Ne quid nimis."

THE ALCOHOL QUESTION IN RELATION TO THE ALCOHOLIC STRENGTH OF BEVERAGES.

THERE appears to be a considerable amount of misapprehension in the public mind as to the alcohol value respectively of spirits, wines, and other beverages. Strictly speaking, a total prohibition order would exclude all fermented beverages, including ginger beer (made with yeast, sugar, and ginger), which may reach an absolute alcohol strength of 2 or 3 per cent. by volume. No beverage, of course, which has been fermented can be free from alcohol. On the other hand, there are a number of effervescing beverages—e.g., ginger ale, lemonade, "tonic" water—which are not fermented at all, they are simply solutions or infusions of the various ingredients aerated with carbonic acid gas under a small pressure. Broadly speaking, alcoholic beverages can be divided into the following groups in the order of their alcoholic strength: Spirits—whisky, gin, brandy, and rum containing about 50 per cent. of alcohol by volume; fortified wines—port, sherry, and madeira containing about 23 per cent. of alcohol by volume; unfortified or the so-called natural wines—some pale sherry, claret, moselle, hock, burgundy, and sauterne containing approximately 12 to 13 per cent. of alcohol by volume. In this group may be included champagne and saumur and sparkling hock, although these may be slightly liqueured. We find, however, that they seldom contain more than 14 per cent. of alcohol by volume. The last group comprises cider, perry, and beer. The alcoholic strength of cider is about that of light beers—viz., approximately 6 per cent. by volume of alcohol. There are, however, two classes of beer, the heavy or high gravity beers and the low gravity or light beers, the former containing about 2 per cent. by volume more of alcohol. The foregoing figures have been obtained in our own laboratory and have been often tested. It is important to remember that beers are sharply distinguished from all other alcoholic liquors inasmuch as they contain a decided amount of nourishing material in the shape of carbohydrates and proteins derived from the malt. The absorption of alcohol is retarded in the presence of food substances and also by free dilution with water. Recent events appear to show that owing to the extra taxation of beer there has been a decided decrease in its consumption and a corresponding increase in the consumption of spirits and especially of whisky. There are reasons for believing that the very cheapest and immature whiskies have thus replaced the much more wholesome malt liquor. If that is the case the extra taxation of beer with the object of gaining increased revenue was unfortunate. The brewing industry, especially if it be confined to brewing light beers, is much less likely to do harm than the distilling industry, which is bound by statute to keep up its product to a very high alcoholic strength. Of wines, a pure natural claret is undoubtedly the most wholesome, and the best non-alcoholic beverage is "dry" ginger ale.

ANGELO CELLI.

THE Roman Società per gli Studi della Malaria (writes an Italian correspondent) has undertaken to erect a monument to the memory of the late professor of State hygiene, Dr. Angelo Celli, to attest its appreciation of his work as the inspiring and guiding spirit of the society in question. The site of the memorial will be a commanding spot in the Agro Romano, to the rehabilitation of which, in a sanitary as well as an agricultural sense, Dr. Celli contributed so assiduously and so well.

GENITAL INFECTION IN LEPROSY.

THERE is a widespread belief among some native races, the Chinese and Japanese, for instance, that impure sexual contact plays a part in the spread of leprosy. Our contemporary, the *American Journal of Tropical Diseases and Preventive Medicine*, has, in an editorial article in a recent number, called attention to this subject. At the present time our knowledge of the ways by which the disease is propagated is defective, and as a consequence it is possible that our efforts to prevent it may not be altogether carried out in the proper directions. The presence in lepers of nasal discharges containing the bacillus lepræ has been regarded as probably concerned in the diffusion of the malady. A few writers on leprosy have at times expressed the opinion that unclean sexual intercourse may be responsible in some cases for the development of the infection; but it cannot be said that hitherto any very convincing facts have been reported to support this view. The article to which we have referred above brings forward some evidence bearing upon the point, and quotes the statements of Dr. E. Jeanselme in the *Bulletin de la Société de Médecine Exotique*. Sometimes, it is alleged, lepromata form in or near the genital organs, and in certain instances pus containing "myriads" of B. lepræ can be squeezed from the urinary meatus. Dr. Jeanselme describes the case of a South American leper living in France upon whose glans penis lepromata were present encroaching upon the meatus, and who had suffered for some time from difficulty in passing his urine. From the urethral discharge of this patient Hansen's bacilli were obtained. In this instance the bacilliferous urethritis was of the gravest importance, since the man was still at the height of his sexual activity. It is suggested that leprous urethritis is not so rare as is commonly supposed, and careful examination would probably often reveal its existence in unsuspected cases. In the later stages of leprosy the sexual powers decline, but they are active in the earlier period of the disease. Systematic examination is proposed in all cases, and where urethral discharge is present it is recommended that the patient should be strictly isolated to prevent any further mischief to others.

STREET ACCIDENTS CAUSED BY VEHICLES.

A RECENT return showing the number of accidents resulting in death or personal injury known by the police to have been caused by vehicles in streets, roads, or public places during 1914 comprises a period during which in London and in many sea-coast towns street lighting at night has been diminished or forbidden. To some extent this incident of war may account for a rather marked increase in the number of accidents which took place during last year as compared with 1913, and it will be of some interest to observe, when the statistics of 1915 are published, whether an increase in the number of darkened areas, and in the strictness of the regulations as to this measure of precaution, as well as with regard to lights on vehicles, can be said to have had any marked effect in augmenting the danger to pedestrians and to others inseparable from motor-driven and other vehicles. Horse-drawn vehicles in any case grow fewer and so do the accidents which they cause. The deaths officially ascribed to them in England and Wales during 1914 numbered 520, as against 554 in 1913; in Scotland 64, as against 86; and in Ireland 49, as against 84. Probably the demand for horses for war purposes, as well as the increase of motor traffic, must be taken into account in connexion with this diminution, but we must also remember, when considering the number of accidents in which motor vehicles have played a part, that in the last months of 1914 an enormous number of our private and other vehicles were already at work on the continent. In England and Wales the number of accidents due to motor vehicles and reported to the police were, in 1914: fatal 1334, non-fatal 29,891; in 1913: fatal 1189, non-fatal 26,135. The corresponding figures for Scotland are: 1914: fatal 142, non-fatal 2308; 1913: fatal 133, non-fatal 2064; and for Ireland: 1914: fatal 53, non-fatal 873; 1913: fatal 53; non-fatal 728. The total increase of accidents due to vehicles of all kinds amounts to 63 so far as fatal accidents are concerned, and to 3994 with regard to non-fatal accidents. It may be suggested that of these the numbers which relate to deaths are likely to be more uniformly accurate than those tabulated with regard to non-fatal accident. Even a severe accident not causing death may never come within the cognisance of the police, and the proportion of accidents thus escaping record must vary according to local circumstances. Be this as it may, the latest police statistics of accidents show an increase which may or may not continue in future years, and, as has been suggested, the war has afforded at least one cause for an upward movement, while another would be an increase, also due to war, in the number of inexperienced drivers. Both these circumstances will have existed in even greater degree during the past three months than during the closing quarter of 1914; but, on the other hand, we must not forget the fact, referred to above, that a very large number of vehicles which otherwise would be circulating upon the highways of the United Kingdom are now abroad. Upon the whole, therefore, it may be wiser to wait until peace has restored normal conditions and not to draw inferences rashly from the figures above quoted, but merely to note that there is an increase in the number of accidents. This must be to some extent due to the popularity and usefulness of the motor-propelled vehicle having increased the number of vehicles on our roads, and has not been necessarily caused by any general negligence on the part of drivers or by any dangerous qualities inherent in this form of locomotion.

THE OPEN TREATMENT OF WOUNDS WITH IODINE.

Dr. Marco Pezzolo has been following up the suggestions made by Professor Alcock, of Edinburgh, as to the advantages obtained by dispensing with the use of antiseptic dressings for wounds. He gives his experiences in a recent issue of *Il Policlinico* and they seem to endorse Professor Alcock's views in that his results were entirely favourable. He makes use of a 4 per cent. solution of iodine in commercial methylic alcohol which should contain from 1·5 to 2 per cent. of acetone, and should be freshly prepared, since stale preparations give rise to irritating fumes. In this detail he differs somewhat from Professor Alcock, who uses a much weaker solution, 2 parts of tincture of iodine B.P. to 98 parts of methylic alcohol, and who attributes the absence of irritating fumes to the use of methylic instead of ethylic alcohol. Dr. Pezzolo made a bioscopic examination of skin treated by painting it three times with this solution at half-hour intervals, and demonstrated the penetration of iodine by means of the reaction between it and a weak solution of nitrite of potash acidulated with acetic acid. He then adopted this method in treating his cases of operation. At first he painted the wound daily after the operation up to the seventh day, but afterwards he limited this treatment to the fourth or even the third day, according to the extent of operative interference, the wound being often hermetically closed by that time. He also at first covered the wound with a dry sterile pad, but latterly discontinued this, the patients merely wearing the sterilised hospital garments. He was at particular pains to ensure complete hæmostasis and perfect adaptation in suturing, and recommends this method in all cases where there is no need to use drainage-tubes or bandages for supports.

TICK PARALYSIS.

SINCE the first proof was afforded that disease may be conveyed by the bite of insects and other parasites, quite a considerable number of affections have been traced to this source of inoculation, and others are constantly added to the list. One of the most recent is the form of paralysis associated with the bite of ticks, which has been observed in British Columbia and in Wyoming and Montana, as well as possibly in Australia. The subjects of the disease are usually children, and the symptoms are flaccid paralysis of the legs with some rise of temperature and considerable quickening of the pulse. If the tick is found and removed promptly these symptoms quickly subside and the child gets well again within 12 or 24 hours without any residual ill-effects; but if this treatment is omitted the paralysis may spread to the arms, stupor may supervene, and the child may die with general paralysis in a condition of coma. More rarely a somewhat similar but milder condition may be produced in adults, the symptoms being pain, vertigo, and incoördination, accompanied by an erythematous rash in one instance. It would seem that more than one kind of tick may be responsible for the conveyance of the disease: thus both the genus Ixodes and the genus Dermacentor have been incriminated. A form of paralysis in the sheep of British Columbia is associated with the presence of tick, and Hadwen was successful in producing the condition experimentally by causing a tick to feed on a lamb, while later, in conjunction with Nuttall, he induced the same symptoms in a dog. Todd,[1] who has recently given an account of the affection, made a series of experiments on monkeys, lambs, puppies, and a guinea-pig, but failed to obtain any definite positive results, nor did an extract of ticks produce paralysis when injected into rats. The disease clearly needs further elucidation, and the existing difficulties will doubtless be cleared up now that attention has been fairly called to the existence of the affection. It appears to be an intoxication rather than an infection, if one can judge from the rapid disappearance of symptoms when the tick is entirely removed, whereas if only the head of the parasite is left in the skin the paralysis may persist and even progress. If the possibility of the presence of a tick be not borne in mind the condition might be mistaken for simple convulsions or for infantile paralysis.

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[1] Reprint from the Journal of Parasitology, 1914, i., 55.

THE EFFECTIVENESS OF TOOTH-WASHES.

THERE are few persons now who have not the conviction that the scientific cleansing of the teeth and gums is very valuable, and the business in antiseptic dentifrices is obviously increasing, judging from the numerous public advertisements which appear in the daily press setting forth the merits of a great number of these preparations. Generally speaking, they are so composed as to render them well adapted for the purpose, and we have submitted a number of them to analytical examination. The choice of antiseptic is commonly confined to carbolic acid, thymol, peppermint, boric acid, benzoic acid, eucalyptus and other essential oils, distributed in vehicles containing as an agent of attrition non-gritty chalk and as an alkaline medium soap. Experiments are usually quoted as to the actual germicidal value of these preparations *in vitro*, but of course it would be more satisfactory to have evidence of their real effect in the mouth where very different conditions must as a matter of fact exist. The use of a tooth-wash does not approach the conditions of a laboratory test, though there can be little doubt that a good deal of germicidal work in the mouth is done by the vigorous application of the toothbrush, and it may be pointed out that the tongue may well be included in the process. To be effective, however, the action of all antiseptics takes time, according to the vitality of the organisms they encounter, and usually the tooth-brushing process does not occupy many seconds. This question of time-exposure is important, but it is very generally overlooked, and consequently the antiseptic treatment of the teeth falls short of that effectiveness which is shown to be the case in laboratory experiments. The tooth-washing process should be more prolonged and the antiseptic wash allowed to remain in contact with the teeth and gums for some minutes instead of seconds before finally washing the mouth clear of antiseptic with plain water.

CONGENITAL DIAPHRAGM OF THE LARYNX.

ACCORDING to Sir StClair Thomson there are but 20 cases of congenital diaphragm of the larynx on record. In the *Saint Paul Medical Journal* for February Dr. G. B. New has reported the following case from the Mayo Clinic, Rochester, Minn. A well-developed and healthy man, aged 27 years, had been hoarse since birth with no apparent change of voice. On exertion, such as running up stairs, he had slight difficulty in breathing. Laryngeal examination showed a thin membrane extending between the margins of the true vocal cords for two-thirds of their extent anteriorly with a concave margin towards the lumen of the glottis. The membrane was pale grey, gradually fading into the margins of the cords, which were rounded and slightly reddened. It appeared thinnest in the median line and at its free margin, and did not show any scarring. The larynx was otherwise normal. During phonation the membrane almost disappeared, but enough remained to prevent approximation of the cords. The Wassermann reaction was negative. Congenital diaphragm of the larynx was diagnosed because of the history of hoarseness since birth, the absence of any illness which would account for such a condition, the appearance of the diaphragm, and the otherwise normal larynx. With a laryngeal knife the membrane was split down the centre from the free margin to the anterior commissure. As the knife approached the anterior commissure there was increased resistance on account of the greater thickness of the membrane. Although measures were taken to prevent it, adhesion of the cords at their anterior part occurred. After the reaction from the operation the voice was slightly improved and breathing easier. As to the origin of such membranes, Ganghofner has shown that the larynx is developed from two symmetrically placed ridges which bound a small fissure. At a certain stage of development these ridges lie close to each other and are attached by epithelial adhesions. The membrane is due to the persistence of these adhesions. Heredity seems to play a part, though in the present case there was no family history of such a condition. A case has been recorded in which the father and sister of a patient had similar formations, and a case in which the mother of a patient had congenital adhesions of the cords at the anterior commissure. Other congenital deformities—shortening of the frænum linguæ and coloboma of the upper lid—have been found associated with congenital laryngeal diaphragm. Microscopic sections have shown the presence of mucous glands and muscle fibres in the diaphragm. Flat epithelial cells were present on the upper surface and cylindrical epithelial cells on the under surface similar to those of the cords. A congenital diaphragm of the larynx is usually in the anterior part, but two cases have been reported in which it was in the posterior part. The diaphragm varies in size from a simple rounding of the angle of the anterior commissure to that present in the case described above. Rounding of the anterior commissure is not an infrequent finding in the examination of the larynx. Treatment, as a rule, has been unsatisfactory, because the raw surfaces of the anterior commissure unite again. Improvement of the voice usually is not marked, although the breathing is easier.

PITUITARY STANDARDISATION.

PHYSIOLOGICAL standardisation has for many years been a subject of controversy, and many efforts were made to induce the General Medical Council to adopt this method in the current British Pharmacopœia. It has been urged that this test affords the only certain method of obtaining uniformity of strength for various galenical preparations. Since the General Medical Council has not thought fit to introduce this innovation, it is not necessary to recount the various arguments adduced in its favour. It must be admitted that the latest contribution[1] is certainly not encouraging. It recounts experiments conducted with a view of comparing the physiological activity of some commercial pituitary preparations, and after a careful description of a large series of experiments the writer (George B. Roth) concludes that in a general way it may be said that the claims of the manufacturers are misleading, since the statement "physiologically standardised" means practically nothing. The tests employed were those known as the isolated-uterus method, and by these tests it was found that of two preparations claiming to be of the same strength one was 7·5 times stronger than the other. Altogether 11 different samples were collected, representing the product from six different manufacturers. They were all bought in the open market in sealed packages, and were kept in their original package in a cool dark place until used. The examination of these samples by the blood-pressure method and the intact-uterus and isolated-uterus methods showed them to possess a wide range of physiological activity, the ratio of variability between the strongest and weakest by the blood-pressure method being 15 to 1, by the intact-uterus method about 10 to 1, and by the isolated-uterus method about 7 to 1. The article concludes that the need for uniformity in the strength of commercial pituitary preparations has been made apparent. Incidentally it may be remarked that these experiments have also demonstrated the unreliability of some of the commercial claims connected with "physiological standardisation" and the urgent need of some central bureau of control before any reliance can be placed on the label.

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[1] Hygienic Laboratory Bulletin, No. 100, November, 1914, Washington.

AUTOPLASTIC OVARIAN TRANSPLANTATION.

THE number of cases of ovarian transplantation recorded is so limited that every case is of value. In the *Medical Journal of Australia* Dr. J. H. Nattras has reported the following case. A married woman, aged 17 years, was admitted for her confinement to the Women's Hospital, Melbourne, on March 5th, 1911. She had suffered from hip and spinal disease for ten years and had not walked, except with crutches, since the age of 7 years. Menstruation occurred regularly until May 15th, 1910, and then ceased. The right lower extremity was 12 inches shorter than the left and much atrophied. The hip-joint was ankylosed with the thigh flexed and fixed in a position over the middle line. There was a tuberculous sinus over the right trochanter, and scars from healed sinuses were present over the lower lumbar vertebræ and right buttock. The appearance of the abdomen was consistent with pregnancy at term. The fœtus was alive and apparently below the average size, but there was not the slightest engagement of the head in the pelvic brim. Examination per vaginam showed a generally contracted pelvis, especially in the true conjugate diameter, which was 3 inches, and the transverse diameter of the outlet, which barely admitted three fingers. As natural delivery was impossible it was decided to perform Cæsarean section and, in consequence of the tuberculous condition of the patient and her deformities, to sterilise her by transplanting the ovaries. As 294 days had passed since the commencement of the last menstruation the operation was performed without delay. On March 7th, 1911, a full-time female child, weighing 6 lb., was removed. The ovaries were excised and immediately placed in normal saline solution at 98·4° F. Each ovary was incompletely divided longitudinally through its hilum. As much ovarian stroma was cut away as possible with curved scissors, because a transplanted ovary degenerates to an extent directly proportionate to its thickness and density. By sacrificing the fibrous stroma the ovum-bearing part is more easily nourished. Each ovary being thus prepared under saline solution, the sheath was separated from the anterior surface of the left rectus muscle until the outer border of the muscle was free. With catgut sutures the surface of the incompletely divided left ovary was fixed on the muscle border so as to form a sandwich with it. The cut surface of the right ovary was fixed with catgut to the right external oblique muscle about 2 inches from the middle line. Recovery was uninterrupted. The patient suckled the baby for nearly five months, until the first week of August. On Sept. 24th menstruation recommenced and was fairly regular. Sometimes the patient knew she was about to menstruate by tenderness in one of the grafted ovaries, usually in the subcutaneous one. She thought that the ovaries swelled on these occasions. Three and a half years after the operation the subcutaneous graft could be easily felt, and a sickening sensation was produced by palpation. The left ovary, which was placed more deeply, could not be palpated definitely, but a spot could be found pressure on which caused a sickening sensation. This sensation and occasional pain on menstruation seemed to indicate the development of nerves in the graft similar to the development of blood-vessels, which is known to occur. The patient looked well, the uterus was of normal size, and there were no symptoms of the menopause. As an example of successful ovarian transplantation the case is of great interest, but it may be suggested, as is done by Mr. A. N. McArthur in a subsequent issue of the same journal, that sterilisation could have been effected by the much simpler operation of resecting the tubes.

Dr. Henry Lewis Jones, consulting medical officer to the electrical department at St. Bartholomew's Hospital, died at his residence, 143, Harley-street, W., on Easter Day. Dr. Lewis Jones was the best known authority in this country on the electrical treatment of disease; he was a pioneer, and remained in the van. He had been in ill-health for some considerable time, and the recent death of his only son while on active service no doubt hastened his death at the age of 58 years.

THE King has given to Dr. David James Galloway His Majesty's Royal licence and authority to wear the Insignia of the First Class of the Order of the Crown of Johore, conferred upon him by His Highness the Sultan of Johore in recognition of valuable services rendered as physician extraordinary to His Highness.

METROPOLITAN ASYLUMS BOARD.—A three months' course of lectures and demonstrations in hospital administration for the Diploma in Public Health will be given as follows: (1) At the North-Western Hospital, Lawn-road, Hampstead, N.W., by Dr. J. MacCombie, medical superintendent, on Mondays and Thursdays, at 5 P.M., beginning Monday, April 12th; and (2) at the Grove Hospital, Tooting-grove, Tooting Graveney, S.W., by Dr. J. E. Beggs, D.P.H., medical superintendent, on Mondays and Thursdays, at 5 P.M., beginning Monday, April 12th. The fee for the course is £3 3*s*. Cheques should be made payable to the "Metropolitan Asylums Board." Medical men desiring to attend a course of instruction are required, before attending at the hospital, to pay the above-mentioned fee to Mr. T. Duncombe Mann, clerk to the Metropolitan Asylums Board, Embankment, E.C., giving their full name and address.

THE MANUFACTURE OF SALVARSAN PRODUCTS IN ENGLAND AND FRANCE.

WE have received the following communication from the Secretary of the National Medical Research Committee (National Health Insurance Act) :—

In consequence of the outbreak of war the Board of Trade suspended the Patent and Trade Mark of the drugs Salvarsan and Neo-Salvarsan, and, as the medical profession will be generally aware, granted a licence to Messrs. Burroughs, Wellcome, and Company for the manufacture in this country of these preparations, which they sell under the names of Kharsivan and Neo-Kharsivan, and to the Société Anonyme des Etablissements Poulenc Frères, of Paris, for the sale in Great Britain (through the agency of Messrs. May and Baker, Limited) of the same products under the names of Arsenobenzol-Billon and Nov-Arsenobenzol-Billon.

It must be understood that, although the manufacturers have in both instances adopted distinguishing trade names for their preparations, the latter are not merely similar substitutes for, but are chemically identical with Salvarsan and Neo-Salvarsan, differing in no known respect from Ehrlich's original products, either in their final constitution or in the details of their preparation. The proof of such absolute identity is, however, in the case of these substances a matter not only of great importance but of unusual difficulty. Salvarsan is a highly reduced substance. If the reduction, which constitutes one stage of its manufacture, is carried out with insufficient vigour, or if the product is later exposed to the danger of oxidation by contact with air, it is readily contaminated with a much more toxic oxidation product. The water-soluble derivative "Neo-Salvarsan" is even more liable to this defect. As a matter of fact it is impossible, by the most careful procedure, altogether to exclude the presence of the more toxic oxide, and the best specimens, from any source, contain it in the proportion of about 0·5 per cent. The extent of this known contamination can be chemically determined with some degree of accuracy, and it is an obligation resting upon the manufacturer to see that no batch of his product contains it in an unsafe proportion. According to Ehrlich the proportion varies from 0·5 to 0·8 per cent. in good specimens.

If the presence of an excess of this easily recognisable and determinable oxide were the only source of difficulty or danger, a chemical standard of purity, on similar lines to many in the Pharmacopœia, could easily have been defined and enforced for these preparations. Unfortunately there are indications that other toxic products, of unknown constitution, may arise through uncontrollable accidents of preparation. The presence of these is only indicated by the fact that the toxicity of the Salvarsan products cannot be accounted for by the percentage of the known toxic oxide which they contain. While, therefore, the determination of the latter is a necessary safeguard, it can be regarded as a preliminary precaution only, and the final appeal, in the present state of knowledge, must be to animal experiment, the result of which gives evidence of the total toxicity from whatever source it comes.

The Board of Trade licence in both the above cases was therefore granted subject to the condition that all samples of these drugs sold in this country should be submitted to biological tests by an authority approved by the Board of Trade.

In the special emergency created by the war the Medical Research Committee, at the request of the Board of Trade, accepted for the time being the responsibility of directing the biological tests of the Salvarsan and Neo-Salvarsan produced by these English and French firms.

Examples of these products, therefore, cannot be properly sold in this country by Messrs. Burroughs, Wellcome, and Company or by Messrs. May and Baker unless and until samples of the batch of product from which they are taken have been tested under the direction of the Committee and a certificate has been issued by the Secretary of the Committee approving that particular batch for sale.

In view of the public interest which must attend the establishment of so intricate a manufacturing process in England at short notice, and in view also of the great importance to the medical profession and the public of the degree to which success has been attained in the manufacture, it is thought desirable that a general statement should be made of the policy which the Medical Research Committee have pursued in their performance of the public duty which has fallen to them.

When the work of biologically testing samples of these arsenical compounds from other than German sources was undertaken, there was no time for any elaborate preliminary investigation of new methods of biological assay. The public need for an immediate and abundant supply was urgent, and the existing stocks of German production were found to be too low to allow delay.

The Committee entrusted the details of the work to most competent pharmacological workers, who took as a basis for the biological control, supplementing the chemical tests of the manufacturer, the methods and standards which had previously been found adequate in Ehrlich's Institute. It was decided, accordingly, that specimens should be passed as satisfactory, under the official certificate of the Committee, which were not more toxic to mice than the average sample of German manufacture. This decision has already involved the rejection of some samples which exhibited no greater toxicity than some of those previously issued in this country, with Ehrlich's authority, and used therapeutically without adverse result.

In addition, however, to this application in all cases of the official German test, every sample has been further tested by the intravenous injection into a rabbit of a large dose only slightly less than that which may be expected, according to Ehrlich's publications, to be lethal for the animal. The object of this test was to guard against the presence of any immediate toxic constituent which might escape detection when doses were given hypodermically to mice. If, in the performance of this test, any difference had been found to exist as between the English or French products on the one hand, and the original German products on the other, the sample in question would not have been passed for certification and for sale to the public.

It should also be added that in addition to these biological tests which have been imposed as an invariable routine, the Committee have caused experimental assurance to be obtained that both the French and English preparations are equivalent to the German in therapeutic effect. This has been done by a comparison of their relative potencies in curing experimental trypanosomiasis in mice and experimental spirochæte infections in rabbits.

In the opinion of the Medical Research Committee, the experimental work which has been done under their direction has already shown that the problem of the successful manufacture of the Salvarsan compounds in England and France has been solved. By the communication from time to time to the manufacturers of certain findings of the scientific workers, entrusted with the problem by the Committee, assistance has been given wherever possible towards the establishment of fully satisfactory technical manufacturing methods, and the Committee are confident that, so far as the strictest laboratory controls can ensure it, the profession and the public are now receiving from English and French sources compounds fully up to the standard of the best German samples previously sold. It is to be hoped that very soon the quantity of the products so supplied will be as sufficient as their quality.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The War.

THE interest in the European War is still the prominent feature of all public discussion and activity. The Federal Government proposes to place no actual limit on the number of men sent abroad, and recruiting is proceeding daily at all important centres. No difficulty has been found in providing medical officers, and volunteers are still in considerable excess of the demand. The physique of the men selected is still kept to a high standard. Much public interest has been shown in the provision of motor ambulances for the front. The Australian Women's National League in Victoria has supplied four from a purely women's subscription. The medical profession throughout Australia have equipped two from a general subscription, and the Victorian Bar has offered one to the Defence Department. Similar movements are on foot throughout all the States, and the various Red Cross and relief funds are being added to daily.

Soldiers and Alcohol.

Public attention has been attracted to the indulgence in alcohol by soldiers, and various suggestions are being made. In Victoria deputations of temperance and religious organisations waited on the Premier and asked for earlier closing of hotels. Sir A. Peacock deprecated the idea that as a body the men were over-indulgent. It might be true that some individuals drank too much, but this was not characteristic of the Australian troops. He promised to look into the Licensing Act and do what was reasonable to mitigate drinking to excess by the men, and at the same time expressed the view that the abolition of wet canteens by the defence authorities did not make for sobriety among the troops.

Personal War Items.

Surgeon-General W. D. C. Williams, the Director-General of Medical Service to the Commonwealth military forces, has been appointed honorary Surgeon-General of the British Army.—Mr. F. D. Bird, lecturer in surgery in Melbourne University, who went as a volunteer with the Expeditionary Force, has been appointed consulting surgeon to the Australian forces in Egypt.—Mr. R. Hamilton Russell, who was attached for some time to the Australian Voluntary Hospital at Wimereux, has returned to Melbourne and resumed practice.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

An Easy Mode of Sterilising Material for Dressings.

Professor Weil, of Lyons, has recommended an excellent method of sterilising linen by ironing. From his experiments on baby-linen Professor Weil finds that the temperature at which laundresses used the heated iron is about 150° C. It will cause hydroquinone to melt. But linen is not sterilised every time it is ironed unless it has been previously dampened throughout. The laundress sprinkles the linen before ironing, thus unconsciously fulfilling the conditions desirable for a satisfactory sterilisation. A fire, a flat-iron, some linen, these are all that is necessary to provide a supply of sterilised dressings, and they can be obtained almost anywhere; even in the country one can find plenty of used linen which, in consequence of its greater suppleness than when new, is admirably adapted to make dressings. It is cut into pieces of the required size and folded into compresses of suitable shape. Every house has a flat-iron, and a fire can always be got. Some flat surface is necessary to serve as an ironing board, and it is covered with some thickness of stuff in cushion fashion so as to make the ironing easier. This is covered with linen, which is carefully ironed first, and is left in place forming a sterile surface upon which the dressings can be ironed. It is necessary before sterilising each object to pass the hot iron afresh over the linen covering of the ironing board. The iron may be considered as sufficiently hot when, on bringing it within a few centimetres of the cheek, a heat too powerful to be borne is felt. In ironing it is necessary to touch the linen, wherefore aseptic hands are required, and in addition it is a good plan to paint the tips of the fingers with tincture of iodine. The blue mark caused on the linen thereby is of no consequence in this case. The *sine quâ non* is that the linen should be carefully moistened before ironing—indeed, the principle of moist sterilisation, as in the autoclave, is thus realised. Finally the linen is ironed surface by surface and fold by fold. It is important never to touch the linen save at the corners and always to run the iron over the place that has been touched. If the material is not to be used immediately it should be covered as soon as possible away from the dust in the air. A soldier's mess-tin makes a very good dressing receptable; it is easily sterilised by boiling or heating.

A Mechanotherapy Apparatus.

M. Privat recently showed at the Academy of Medicine a very simple method of constructing a mechanotherapy apparatus. Every medical man knows how to construct a continuous traction apparatus with a weight, a piece of cord, and a pulley. If the point of attachment of this pulley is made mobile by suspending it by a cord from the ceiling, the weight in balancing produces rhythmic tractions passing alternately from maximum to minimum. This apparatus can further be graduated according to the degree of sensibility of the joint. With two pulleys of different diameters it is possible to make five different dispositions, each giving (for the same weight) a different result, which allows diminution or augmentation of the interval between maximal and minimal tractions.

Public Health.

REPORT FOR 1913 OF THE MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER OF THE ADMINISTRATIVE COUNTY OF LONDON.[1]

PART II.—EDUCATION.

IN an introductory note to this part of the present report Dr. W. H. Hamer gives an account of the further development of school work in the direction foreshadowed in his previous report. Among measures of special importance he refers to the reorganisation of the Council's arrangements for the medical inspection and treatment of school children, the promotion of efforts for the control of infection in schools, and the maintenance of schemes for encouraging personal hygiene and cleanliness.

Medical Inspection and Treatment.

In making provision for the efficient inspection and treatment of school children the numerical strength of the medical inspecting staff must obviously be adequate. The question of the suitability of the candidate for appointment will also require careful consideration. Respecting the latter point Dr. Hamer insists that for the efficient discharge of his duty the school doctor should have received special training in public health. It is imperative, for example, that he should be expert in the detection of conditions inimical to health and in the investigation of infectious outbreaks in the schools under his charge, inasmuch as prompt and decisive action is often required at the school itself in order, *inter alia*, to avoid unnecessary interference with educational work. Moreover, this officer should be thoroughly conversant with the physical and mental development of normal and abnormal children, so that he may be competent to advise in cases of backwardness or retarded development or of other conditions detrimental to educational progress. When medical inspection was first undertaken in London the term of appointment of officers seldom exceeded three years. Consequently the supervision and training of the newly appointed doctors entailed a severe burden on the supervising staff, and frequent changes proved so prejudicial that steps have recently been taken to secure greater permanency and continuity in the work. The inspecting medical staff has therefore been reconstituted. London has been divided into five districts instead of four as formerly, the staff of each district being controlled by a divisional medical officer with the aid of additional permanent and temporary medical assistants. In order to comply with the suggestions of the Board of Education it has been arranged that the permanent medical assistants shall share in the general work of the department, including the inspection and "following up" of defective children, the visitation of treatment centres, and the regulation of open-air schools. General public health supervision is now added to the duties of these officers, including the investigation of infectious disease and the control of tuberculosis among school children.

Centres for Medical Treatment.

During the year under review there has been a large increase in the facilities afforded by the Council for institutional treatment. At the end of the year 34 centres existed, in which 84,350 children were treated, or more than 11,000 in excess of the number treated in the previous year. The reorganisation of the medical staff already referred to has led to extension of the school doctors' work by reinspection in all cases where hospital or other medical treatment has been recommended. During the year the number of such re-inspections is estimated at 150,000. Dr. Hamer testifies to the satisfactory character of the work now in progress, a result that could not have been achieved by a staff previously unskilled in the details of school inspection.

Government Grants.

In the course of 1913 new regulations were issued by the Board of Education providing for the first time for the payment of grants in respect of medical inspection, in addition to those formerly payable in respect of medical treatment. The grant for the year under notice was equal to 46 per cent. of the County Council's total expenditure under this head. In announcing a grant of more than £31,000 the Board expressed their appreciation of the improvements effected in the work of the authority's school medical service and, in particular, their recognition of the extension of facilities for treatment. Moreover, in Sir George Newman's recent report to the Education Department,[2] referring to the medical treatment of London school children under the County Council's scheme, the following sentence occurs: "In any case, the figures clearly indicate the vast amount of benefit that is accruing to the defective school children of London as the result of the Council's organised scheme of medical inspection and treatment."

Public Health Laboratory.

A well-equipped laboratory has recently been established by the County Council which, as part of the public health organisation, has already been found valuable by the medical department. Amongst other uses it frequently affords a trustworthy means of diagnosis in cases of sore throat associated with infectious disease, as well as in doubtful cases of ringworm, favus, and other microbic affections. It has consequently been of great assistance in the detection of possible foci of infection in the Council's schools; in addition to which, specimens are frequently received for bacteriological examination from the places of detention and the industrial schools belonging to the County Council. The number of cultures examined in this laboratory in the course of 1913 has exceeded 2000.

Infectious Diseases amongst School Children.

Scarlet fever.—Compared with the average for the three previous years, scarlet fever showed a considerable increase in London schools.

Measles.—The incidence of measles amongst school children was lower in 1913 than in any of the preceding seven years. Among measures for limiting measles prevalence compulsory notification has been fairly tried, but seldom with success. For protective purposes exclusion from school is now generally confined to children in the infant departments, more than 90 per cent. of the children attacked being below 5 years of age. The severity of attack largely depends on the age of the patient. The younger children usually suffer excessively and are more liable than their elders to complications which may be fatal or may predispose to tuberculosis, ear discharge, or injury to eyesight. Accordingly, if children cannot be prevented from eventually contracting measles, efforts should at any rate be made to protect them from attack in early infancy.

Diphtheria.—Diphtheria prevalence was more marked in London than in the provinces. Of the London attacks notified at all ages more than one-third occurred among school children. Many schools which showed a tendency to spread the infection by contact were kept under constant observation by school doctors, and 2220 cultures were forwarded for examination in the laboratory. True diphtheria germs were identified in 112 cases, whilst a further 212 cultures contained germs not definitely distinguishable from the Klebs-Löffler bacillus. Still unsolved is the difficulty of dealing effectually with bacteriological cases of diphtheria in which the usual clinical symptoms of the disease are not apparent. Further research in this direction is therefore desirable.

Ringworm and favus.—The differential diagnosis between these diseases is by no means easy to make, and the importance of laboratory aids to diagnosis is apparent in the discovery of these otherwise unrecognised cases. Of the 76 cases of favus reported during the past two years no fewer than 63 have been discovered by microscopical examination in the Public Health Department. During 1913 large numbers of specimens of hair have been sent to the laboratory by school doctors for microscopic examination. Out of 3464 specimens submitted ringworm was found in 1979 cases and favus in 57 cases; in 1415 cases no fungus was found. Ringworm involves so much interference with school attendance and with the educational progress of children that it would be a misfortune if treatment by X rays, the speediest known method of cure, were discontinued. Much improvement has recently been effected in the method of applying the X rays. Most of the cases where unsatisfactory results have been recorded date from the early days of that treatment.

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[1] Published by P. S. King, Limited, London, price 2s. 6d. Part I. Public Health) was reviewed in THE LANCET of April 3rd, p. 720.

[2] THE LANCET, Jan. 9th, 1915, p. 84.

Tuberculosis amongst School Children.

In the routine work of medical inspection special attention is given to the detection of early tuberculosis amongst school children, the object being to place them promptly under the treatment of the School Care Committee. In the schools examined during the year 0·41 per cent. of the children examined were found to be the subjects of pulmonary tuberculosis, and 0·32 per cent. of other tuberculous affections. On the whole it appears that the incidence of tuberculosis in school children varies inversely with the average standard of comfort in the home. The close interrelation of malnutrition with tuberculosis is generally recognised and has been confirmed by recent investigations.

Open-air Schools.

The two open-air schools maintained by the Council have been in operation throughout the winter with uniformly good results to the children's health. Medical inspection of the ordinary elementary schools has abundantly proved the need for additional schools on the open-air principle, but for these it has hitherto been found impossible to obtain suitable sites either north or south of the Thames. Particulars are given of the schools at Birley House and Shooter's Hill and of the defects noted among the children there resident, as well as of the considerable numbers of children returned to ordinary elementary schools because of improvement in their physical condition. Last year's experience of the former school confirms that of the previous six years as to the existence of a large class of delicate children who are capable of mental and physical improvement in such schools. At the Shooter's Hill school, where the average attendance is about 100, so great was the improvement effected by the treatment there received that nearly one-third of the pupils were discharged in 1913 as fit to return to the ordinary elementary schools. Figures are given showing measurements of the height, weight, and chest capacity of the boys and girls respectively. These figures show general amendment, which is also borne out by the increased smartness and intelligence observed in the children. It is frequently stated that after a sojourn at Shooter's Hill school children previously regarded as almost defective mentally had returned completely changed—bright, energetic, and good workers, in strong contrast with their condition prior to entering that institution.

Personal Hygiene and Cleanliness.

In the report for last year the development of the "cleansing scheme" was traced from the purely voluntary work effected in 1902 to the County Council's arrangements of 1912, whereby cleansing centres were established and a large staff of specially trained nurses were appointed. In the year under review nearly 859,000 children were examined, more than 29,000 of whom were found to be verminous. The fact that an increasing proportion of these children are now voluntarily cleansed at home shows that parents are at length beginning to realise the importance of cleanliness to the well-being of their offspring. The scheme for dealing with unclean heads and verminous bodies has been modified so as to accelerate the process of cleansing and to secure closer coöperation with the local authorities in dealing with clothing, &c., in the homes of the children.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 96 English and Welsh towns with populations exceeding 50,000 persons at the last census, 8917 births and 6879 deaths were registered during the week ended Saturday, March 27th. The annual rate of mortality in these towns, which had declined from 20·7 to 19·3 per 1000 in the five preceding weeks, rose in the week under notice to 19·8 per 1000 of their aggregate population, estimated at 18,134,239 persons at the middle of 1914. During the first 12 weeks of the quarter just ended the mean annual death-rate in these towns averaged 19·5, against a corresponding rate of 20·5 per 1000 in London. The annual death-rate during the week ranged from 6·1 in Lincoln, 9·7 in Leyton, 9·9 in Grimsby, 10·5 in Stockton-on-Tees, and 10·6 in Barnsley, to 26·4 in Salford, 27·5 in West Hartlepool, 28·1 in Northampton, 30·0 in Wolverhampton, and 34·2 in Aberdare.

The 6879 deaths from all causes were 165 in excess of the number in the previous week, and included 695 which were referred to the principal epidemic diseases, against numbers increasing from 511 to 739 in the six preceding weeks. Of these 695 deaths, 397 resulted from measles, 127 from whooping-cough, 70 from infantile diarrhœal diseases, 58 from diphtheria, 31 from scarlet fever, and 12 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·0, or 0·1 per 1000 less than in the previous week. The deaths attributed to measles, which had increased from 207 to 421 in the six preceding weeks, fell to 397, and caused the highest annual death-rates of 3·4 in Croydon, 3·7 in Merthyr Tydfil, 4·1 in Smethwick, 4·4 in Darlington, 5·3 in West Bromwich, 6·0 in Wolverhampton, 7·4 in Northampton, and 9·7 in West Hartlepool. The deaths referred to whooping-cough, which had been 110, 120, and 151 in the three preceding weeks, fell to 127, and included 31 in London, 10 in Liverpool, 6 in Bristol, 5 each in Brighton and Birmingham, and 4 each in Leeds, Merthyr Tydfil, and Aberdare. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 71, 77, and 63 in the three preceding weeks, rose to 70, of which 24 were registered in London, 6 in Birmingham, and 5 in Liverpool. The deaths attributed to diphtheria, which had been 64, 51, and 61 in the three preceding weeks, fell to 58 and included 16 in London, 8 in Birmingham, and 3 in Liverpool. The deaths referred to scarlet fever, which had been 32, 21, and 29 in the three preceding weeks, rose to 31, of which 13 occurred in London, and 2 each in Ipswich and Wigan. The fatal cases of enteric fever, which had been 10, 15, and 14 in the three preceding weeks, fell to 12, and included 5 in London and 3 in Manchester.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily declined from 5036 to 2730 in the 17 preceding weeks, had further fallen to 2672 on Saturday, March 27th; 301 new cases were admitted during the week, against 298, 275, and 289 in the three preceding weeks. These hospitals also contained 1445 cases of diphtheria, 342 of measles, 57 of enteric fever, 16 of whooping-cough, and 3 of small-pox. The 1935 deaths from all causes in London were 112 in excess of the number in the previous week, and corresponded to an annual death-rate of 22·3 per 1000. The deaths referred to diseases of the respiratory system, which had been 468, 442, and 478 in the three preceding weeks, further rose to 481 in the week under notice, and were 190 above the number recorded in the corresponding week of last year. The deaths from influenza numbered 65, against 48, 54, and 67 in the three preceding weeks.

Of the 6879 deaths from all causes in the 96 towns 224 resulted from different forms of violence and 495 were the subject of coroners' inquests, while 1930 occurred in public institutions. The causes of 51, or 0·7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Sheffield, Leeds, Bristol, West Ham, Bradford, Hull, and in 63 other smaller towns. Of the 51 uncertified causes, 10 were registered in Birmingham, 4 each in Liverpool and Preston, 3 in Southend-on-Sea, and 2 each in London, Reading, Stoke-on-Trent, Southport, Darlington, Sunderland, South Shields, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,345,500 persons at the middle of this year, 1290 births and 948 deaths were registered during the week ended Saturday, March 27th. The annual rate of mortality in these towns, which had been 23·2, 20·9, and 20·8 per 1000 in the three preceding weeks, rose to 21·1 per 1000 in the week under notice. During the first twelve weeks of the quarter just ended the mean annual death-rate in these towns averaged 22·4, against 19·5 per 1000 in the large English towns. Among the several towns the death-rate during the week ranged from 13·0 in Coatbridge, 13·7 in Falkirk, and 14·0 in Ayr, to 23·1 in Aberdeen, 25·4 in Kilmarnock, and 29·1 in Dundee.

The 948 deaths from all causes were 12 in excess of the number in the previous week, and included 132 which were referred to the principal epidemic diseases, against 131 and 139 in the two preceding weeks. Of these 132 deaths, 81 resulted from whooping-cough, 21 from measles, 12 from scarlet fever, 10 from infantile diarrhœal diseases, 7 from diphtheria, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·9, against 2·0 per 1000 in the large English towns. The deaths attributed to whooping-cough, which had been 91, 87, and 88 in the three preceding weeks, fell to 81, and included 46 in Glasgow, 13 in Dundee, 11 in Edinburgh, and 4 in Kilmarnock. The deaths referred to measles, which had been 21, 15, and 26 in the three preceding weeks, fell to 21, and comprised 14 in Glasgow and 7 in Dundee. The fatal cases of scarlet fever, which had been 9, 13, and 11 in the three preceding weeks, were 12 in the week under notice, and included 6 in Glasgow and 2 each in Aberdeen and in Paisley. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 7, 5, and 6 in the three preceding weeks, rose to 10, of which 5 occurred in Glasgow and 2 in Aberdeen. The deaths referred to diphtheria numbered 7, against 15, 10, and 7 in the three preceding weeks, and included 4 in Glasgow. The fatal case of enteric fever was registered in Paisley. In addition to the above deaths a fatal case of typhus fever was recorded in Dundee.

The deaths referred to diseases of the respiratory system, which had been 264, 215, and 188 in the three preceding weeks, further fell to 186 in the week under notice, but were 75 above the number recorded in the corresponding week of last year. The deaths attributed to violence numbered 34, against 23 and 36 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,212,380 persons at the middle of this year, 651 births and 555 deaths were registered during the week ended Saturday, March 27th. The annual rate of mortality in these towns, which had declined from 27·6 to 24·0 per 1000 in the four preceding weeks, further fell to 23·9 per 1000 in the week under notice. During the first 12 weeks of the quarter just ended the mean annual death-rate in these towns averaged 25·6, against corresponding rates of 19·5 and 22·4 per 1000 in the English and Scotch towns respectively. The annual death-rate during the week under review was equal to 26·8 in Dublin (against 22·3 in London and 21·8 in Glasgow), 21·3 in Belfast, 26·5 in Cork, 34·2 in Londonderry, 20·3 in Limerick, and 11·4 in Waterford, while in the 21 smaller towns the mean rate was 22·4 per 1000.

The 555 deaths from all causes were 3 fewer than the number in the previous week, and included 47 which were referred to the principal epidemic diseases, against 37 and 36 in the two preceding weeks. Of these 47 deaths, 16 resulted from whooping-cough, 12 from measles, 11 from infantile diarrhœal diseases, 6 from scarlet fever, and 2 from diphtheria, but not one from enteric fever or from small-pox. The mean annual death-rate from these diseases was equal to 2·0, against corresponding rates of 2·0 and 2·9 per 1000 in the English and Scotch towns respectively. The deaths attributed to whooping-cough, which had been 10, 12, and 14 in the three preceding weeks, further rose to 16, of which 10 were recorded in Dublin and 3 in Belfast. The deaths referred to measles, which had been 8 in each of the four preceding weeks, rose to 12, and included 4 each in Belfast and Coleraine and 2 in Portadown. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 11, 14, and 4 in the three preceding weeks, rose to 11, of which 6 were registered in Dublin and 3 in Belfast. The 6 deaths attributed to scarlet fever were 2 in excess of the average in the earlier weeks of the quarter, and included 3 in Cork. The fatal cases of diphtheria were recorded in Dublin and Belfast respectively.

The deaths referred to diseases of the respiratory system, which had been 188, 167, and 155 in the three preceding weeks, further fell to 145 in the week under notice. Of the 555 deaths from all causes, 157, or 28 per cent., occurred in public institutions, and 8 resulted from different forms of violence. The causes of 17, or 3·1 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the English towns the proportion of uncertified causes did not exceed 0·7 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned have been granted temporary commissions as Surgeons in His Majesty's Fleet:—George Murray Heiron, Charles Edward Reckitt, William Whitfield, Marmaduke Fawkes, Hugh Bernard German, William Gifford Wyllie, Harry Aitken Hewat, and John Benjamin Crawford.

The following appointments have been notified:—Staff-Surgeon: G. S. Davidge to the *Sirius*. Surgeon: A. V. J. Richardson to the *Brilliant*.

ROYAL NAVAL VOLUNTEER RESERVE.

Temporary commissions in the Royal Naval Volunteer Reserve have been issued as follows:—Dental Surgeons: Stanley Maddox Gardner, Clementson Glover, Alan Basil Hacking, Roy William List, Frederick William Paul, Edwin Joseph Handford, and Herbert John Corin.

ROYAL ARMY MEDICAL CORPS.

The undermentioned are granted temporary rank whilst serving with the Field Ambulances of the Welsh Division:—As Lieutenant-Colonel: John Edward Henry Davies dated Dec. 2nd, 1914), Major Robert John Richard Cobden Simons, Territorial Force (dated Jan. 9th), and Captain Thomas Price Thomas, Territorial Force (dated Jan. 6th). As Major: William Bickerton Edwards (dated Dec. 2nd, 1914). As Captain: Andrew Woodroffe Anderson (dated Dec. 2nd, 1914) and Edward Llewelyn Parry-Edwards (dated Jan. 30th). As Lieutenant: Frederic Samuel Rowland (dated Dec. 20th, 1914).

The undermentioned Lieutenants to be Captains:—Dated March 30th: Alexander G. Biggam, Roy K. Mallam, William McNaughtan, David T. M. Large, Walter W. Pratt, William F. Christie, Maurice Burnett, Alexander Hood, Edward A. Strachan, Cuthbert J. Blaikie, James H. M. Frobisher, Walter B. Stevenson, John L. Ritchie, David T. Richardson, Owen W. J. Wynne, Christopher M. Ingoldby, Sydney J. Higgins, Gilbert A. Blake, Percy A. With, Cuthbert J. H. Little, Stephen J. Barry, Robert W. Vint, Henry R. L'Estrange, Harold W. L. Allott, Edward P. A. Smith, Robert B. Price, James B. A. Wigmore, John Hare, Robert A. Flood, Eric C. Lang, William V. Corbett, Leopold T. Poole, Thomas H. Balfour, Frank C. Cowtan, Charles C. Jones, Edward V. Whitby, Edmund U. Russell, Robert G. Shaw, Norman W. Stevens, Richard B. Phillipps, Alexander L. Urquhart, Noel T. Whitehead, James C. Sproule, Avenell F. C. Martyn, George F. Allison, Robert C. Carlyle, John E. Hepper, Arthur A. M. Davies, Leslie Dunbar, Henry F. Panton, Henry Beddingfield, D.S.O., Frederick C. Davidson, Stanley D. Large, Cyril Helm, Humfrey N. Sealy, Albert Jackson, Edward C. Beddows, George E. Dyas, Conyngham V. Thornton, John Rowe, William P. Croker, Arthur B. H. Bridges, Aubrey G. Brown, Percival D. Warburton, Robert Hemphill, Summer H. Smith, Ernest W. Wade, Bernard Woodhouse, William K. Morrison, Edgar Percival, Henry C. D. Rankin, Treffry O. Thompson, Stanley J. Linzell, Lewis R. Shore, Allan Watson, Norman V. Lothian, John G. Gill, Sidney M. Hattersley, John W. C. Stubbs, Arthur J. A. Menzies, John Fitz G. Gwynne, Thomas F. P. Breen, David C. G. Ballingall, Herbert G. Winter, James M. Evatt, Francis G. Thatcher, William P. Mulligan, Gerard P. Selby, John G. Butt, Neil Cantlie, Edward A. P. Brock, Percival T. Priestley, Edward Phillips, Spence D. Reid, Peter J. Ryan, Barcroft J. L. Fayle, and Evelyn A. Sutton.

Temporary Lieutenant Claude W. S. Saberton relinquishes his temporary commission on account of ill-health (dated March 17th).

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned Lieutenants are confirmed in their rank:—Eric S. Mawe, Edward W. Mann, and Sydney W. Lund.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st Home Counties Field Ambulance: Lieutenant Charles Killick to be Captain (temporary).

2nd Home Counties Field Ambulance: Captain Antony A. Martin to be Major (temporary).

2nd East Anglian Field Ambulance: Lieutenant James Arthur, from Attached to Units other than Medical Units, to be Lieutenant.

1st West Lancashire Field Ambulance: Surgeon-Captain James Wood, from 5th Battalion, The Loyal North Lancashire Regiment, to be Captain.

2nd London (City of London) Field Ambulance: Lieutenant Horace G. L. Haynes to be Captain, and William Travers Homan to be Lieutenant.

2nd Lowland Field Ambulance: Major William Bryce, from 1st Lowland Field Ambulance, to be Major.

3rd Lowland Field Ambulance: Captain James W. Keay to be Major (temporary).

1st East Anglian Field Ambulance: Transport Officer and Honorary Lieutenant Frederick Harris resigns his commissions.

3rd London (City of London) Field Ambulance: Major George L. L. Lawson to be Lieutenant-Colonel (temporary).

6th London Field Ambulance: William Henry Dickinson to be Lieutenant.

2nd Northumbrian Field Ambulance: Clifford Crawshaw Pickles (late Lieutenant, 5th Battalion, Alexandra, Princess of Wales's Own (Yorkshire Regiment), to be Captain (temporary).

2nd Wessex Field Ambulance: Lieutenant Henry W. Spaight resigns his commission on account of ill-health.

3rd East Anglian Field Ambulance:—The undermentioned to be Lieutenants: Alexander Cuffe and Edward Knox Goodwin.

1st East Lancashire Field Ambulance: Lieutenant Henry E. Fox, from Attached to Units other than Medical Units, to be Lieutenant.

3rd South Midland Field Ambulance: Captain Charles Corfield, from Attached to Units other than Medical Units, to be Captain.

1st Southern General Hospital: Eric Walter Assinder to be Captain (temporary).

South Midland Casualty Clearing Station: William Albert Higgins to be Lieutenant.

1st London (City of London) Sanitary Company: Henry Holroyd to be Lieutenant.

West Riding Divisional Sanitary Section: Surgeon Captain Harold F. Horne, from the 5th Battalion, The York and Lancaster Regiment, to be Captain.

Attached to Units other than Medical Units.—Captain John Hobbs is seconded. To be Captains: John Alban Davies (late Captain, 7th (Merioneth and Montgomery) Battalion, The Royal Welsh Fusiliers) and Lieutenant Oskar Teichmann. To be Lieutenants: Lieutenant Alfred H. Bell, from 5th London Field Ambulance, Gerald Wetherell Capron Hollist (late Surgeon, Royal Navy), Reginald Devereux Moore, Charles Nyhan (late Lieutenant, 3rd Battalion, The Monmouthshire Regiment), and Berkeley Noel Ash.

THE NATIONAL INSURANCE ACT.

Exempt Persons.

DRAFT regulations, dated March 16th, 1915, have been issued to deal with the limited benefits to be enjoyed under the Insurance Acts by "exempt persons"—i.e., by those who on account of their having means of livelihood independently of their wages from their employers are allowed exemption from contributing to the National Insurance Funds. Employers, it will be remembered, pay the same contributions for exempt persons as for others. Under the new regulations, and subject to the restrictions and conditions prescribed by them, exempt persons will enjoy medical benefit and sanatorium benefit, described in the regulations as "the benefits," an exempt person in respect of whom not less than 20 weekly contributions have been paid being entitled to apply to the Commissioners, and to enjoy the benefits, subject to the regulations being otherwise satisfied, six weeks later. An exempt person who does not so apply, but for whom 20 contributions have been paid, becomes entitled at the commencement of the next benefit period after that in which the twentieth payment on his behalf was made, and provision has necessarily had to be made for those cases in which broken periods of contribution and other circumstances have to be taken into consideration. Contributions out of the Exempt Persons Fund, which is instituted as a separate fund, are to be made to the General Medical Benefit Fund, the General Medical Benefit Administration Fund, and the General Sanatorium Benefit Fund.

Complaints against Medical Practitioners in London.

The reports of subcommittees laid before the London Insurance Committee at its recent meeting contain a good deal of information as to the practical working of the Insurance Acts in the abnormal circumstances created by the war. The report of the Medical Service Subcommittee upon complaints against medical practitioners upon the panel for the County of London commences with a question arising out of an incident which took place at the end of November, and discloses nothing of a serious nature with regard to the supply of medical treatment in the metropolis. Among ten cases investigated three complaints referred to the same practitioner, and of the remaining complaints only two are found to be wholly or partly justified. One of these related to the conduct of a practitioner who declined to visit a patient when sent for, on the ground that he could not quit his surgery at the time. The patient was thus left without medical attention for nearly two days while suffering from a broken leg. The practitioner pleaded that he was ill and had been unable to obtain a locum-tenent. He had also apparently been under the impression that he was not required to provide treatment in cases of accident, and had so informed the patient's messenger, and he had given the messenger a bottle of liniment, with directions, without having seen the leg, which he had been told was broken, and which in fact was broken. The subcommittee found the complaint of neglect to be substantiated, and recommended severe censure for the practitioner. He was required to make provision for a deputy to act on his behalf when unable to attend his patients personally, and his conduct in prescribing without having seen his patient was made the subject of a separate resolution.

Excessive Prescribing and London Practitioners.

The Panel Committee (London) reporting upon cases submitted to them for investigation by the Pharmaceutical Committee, and relating to drugs prescribed in May, 1914, stated that in the case of four practitioners on the panel the cost of drugs and appliances was in excess of what was reasonably necessary for the adequate treatment of their patients; that in the case of three practitioners there was no such excess; that in the case of four others they were unable to come to a decision upon the materials before them. The consideration of these last was therefore postponed. In the case of seven others circumstances prevented the committee from making an investigation.

Obituary.

SIR JOHN LENTAIGNE, F.R.C.S. IREL.,

PAST PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE death of Sir John Lentaigne occurred suddenly at his residence in Dublin on March 30th in his sixtieth year. He had been feeling unwell for a few days, but thought little of it, and was persuaded with difficulty to remain in bed on the morning of his death. Early in the afternoon, while talking with two of his colleagues, he suddenly expired. He had been sorely tried a few months ago by the loss of one of his sons at the battle of the Aisne. The lad, a lieutenant in the Connaught Rangers, who had just entered the service, was first reported "missing," and it was not until after some weeks that the fact of his death was ascertained. The anxiety and grief made an indelible mark on his father's health. Only a few weeks ago Sir John Lentaigne suffered a further loss in the death of his brother.

Sir John Lentaigne was the grandson of a French *émigré* of good family who settled in Dublin at the time of the Revolution and became a prominent medical practitioner. On account of his nationality he was chosen to attend Wolfe Tone in prison in his last illness. Lentaigne's father was a Government official in Ireland, and was knighted for his public services. John Lentaigne, born in Dublin in 1855, was educated first at Clongowes College and later at Vannes in France, and then entered Trinity College. He received his medical education at the Catholic University School of Medicine. He graduated B.A. of Trinity College in 1880, and received the licences of the Royal Colleges in the following year. In 1886 he was admitted a Fellow of the Royal College of Surgeons in Ireland. Having been for a short time assistant surgeon to the Richmond Hospital, he became one of the visiting surgeons to Jervis-street Hospital in 1883, and four years later he left there for the Mater Misericordiæ Hospital, where he worked regularly up to the time of his death. He was for many years consulting surgeon to the Royal Hospital for Incurables, and also one of the Lord Chancellor's Visitors in Lunacy. He was surgeon to the household of successive Viceroys for the past 18 years. For 15 years he was a member of the Council of his College, and in 1908 he was elected President. In 1910 he was knighted.

Sir John Lentaigne's reputation as a surgeon was high. He made no claim to great originality, but his work bore the mark of thoroughness and sound experience. He took infinite pains to do the best for his patients, and the most tedious case never exhausted his interest. In his early days, when antisepsis was still little understood and asepsis unknown, he attracted attention and even astonishment by his rigorous methods. He did well in private practice. His family position, his ability, and his charm of character combined to make his career successful. No stress of work, however, was allowed to distract him from the due performance of his hospital duties. Sir John Lentaigne's character and manner were singularly attractive. Until within the last few months, when sorrow tried him, he seemed to be of those who never grow old. He had the *joie de vivre* of a boy, and he had also the frankness and straightforward simplicity of a boy. Success did not spoil him. To his brother practitioners he was always the honourable and kindly comrade, to whom professional jealousy was a thing unknown. In private life he was the soul of geniality, but it was the geniality that rests on a strong foundation of character. In Lentaigne's death not only the Dublin school of surgery but the medical profession have lost a man of outstanding character. His friends miss one of the most lovable of their circle.

BERNARD ROTH, F.R.C.S. Eng.

Mr. Bernard Roth, whose death at the age of 63 we briefly announced in our last issue, was the eldest son of the late Dr. M. Roth, of Wimpole-street, W. After obtaining his M.R.C.S. in 1874 he became house surgeon at University College Hospital, and also studied at Brussels, Paris, Vienna, and Berlin. In 1875 he took the L.S.A. and the M.D. Brux., and joined his father in orthopædic practice, being particularly interested in the treatment of lateral curvature of the spine. In 1878 he married Anna Elizabeth, third daughter of the late Right Hon. John Bright, P.C., M.P., of One Ash, Rochdale, and in the same year obtained the F.R.C.S. Eng. From then onwards he took a leading place among orthopædic surgeons, and devoted his energies to introducing to the medical world a more rational method of treating lateral curvature than was then in use. He was particularly opposed to its treatment by mechanical supports, and through his writings and demonstrations did much to open the eyes of his professional brethren to the harmfulness of such methods.

In 1888 he was elected a corresponding member of the American Orthopædic Association, and in the following year published "The Treatment of Lateral Curvature of the Spine," a second edition of which he brought out ten years later. In the treatment of other orthopædic conditions he was much influenced by his friendship with the late H. O. Thomas, of Liverpool, and frequently attended Thomas's Sunday morning clinics. At these Thomas saw patients at his house free of charge, and his rooms were thronged with scores of patients waiting for his opinion and advice. He was thus one of the first surgeons to become expert in the application of Thomas's splints, now so universally in use. He carried on his practice daily in both London and Brighton for 27 years, travelling by the midday train between the two. At Brighton he held the posts of orthopædic surgeon to the Royal Alexandra Hospital for Children and surgeon to the St. John's Convalescent Home.

In his later years he was much interested in numismatics, and besides other papers published in 1910 a monograph on the Hiberno-Danish coins. At the time of his death he was a Vice-President of the British Numismatic Society and of the Royal Numismatic Society, and a Fellow of the Society of Antiquaries. He also occupied himself with magisterial work, being a J.P. for Brighton (1892), a J.P. for Middlesex (1905), and a Visiting Justice, H.M. Prison, Pentonville.

He leaves a wife and two children, a son and daughter, the former of whom, Paul Bernard Roth, follows his father's profession.

JOHN VINRACE, M.D. St. And., M.R.C.S. Eng., L.S.A.

Dr. John Vinrace died at his residence, "Denehurst," Oxford-road, Moseley, on March 12th, at the age of 81. The eldest son of the late Mr. Luke Vinrace, of Ashby-de-la-Zouch, he went to Birmingham in 1851, when he was apprenticed to a medical man and studied at the old Sydenham College, also acting as indoor surgical assistant at the General Hospital. In 1855 he qualified as M.R.C.S. Eng. and L.S.A., and two years later graduated as Doctor of Medicine at the University of St. Andrews. He first started practice in Moseley, but later he entered into partnership at Birmingham. He returned to Moseley some 15 years ago, when he retired. He was one of the oldest and most respected practitioners in Birmingham.

Correspondence.

"Audi alteram partem."

THE DEARTH OF DOCTORS.

To the Editor of The Lancet.

Sir,—Day by day the seriousness of the situation created by the war is deepening, while with those best fitted to judge the demand for more and more doctors seems as steadily to be increasing. Are we then to go on muddling over the question of how best to provide for the inevitable emergency, or shall we take decided steps to deal radically with the situation? Yeoman service has been done by Dr. N. Walker and the Scottish Committee in the interests of the profession as well as of the public at large. But, all the same, it must be allowed that these public-spirited gentlemen have been able to do but little to meet the undoubted dearth of doctors, the deficiency affecting not only the present but the future supply of medical practitioners.

To deal adequately with the position there is only one way of going to work, and that is to revert to the old four years' curriculum. There need be less reluctance against the apparent reduction of the standard of qualification, when it cannot be denied that the change made less than 30 years ago has failed to meet the paramount argument for extending the course of study—i.e., the provision for an extra year to be solely devoted to *practical* bedside work—a result which the change has notoriously not effected. With a sufficiently strict final examination there need be no fear, any more than was the case 30 years ago, of the standard for admission to the Register being degraded to an injurious extent, while the expense of medical education would be lessened. Above all, the change would result in an annual addition of 20 per cent. to the roll of diplomates.

I have just been told of the case of a candidate for the B.D. degree in one of our Scottish Universities who has joined Kitchener's army. Although he is short by a year of completing his curriculum he is to be allowed to sit for his degree. If he be fortunate enough to pass will his fellow graduates think the less of him? War excuses many things which are then a glory and not a disgrace.

I am, Sir, yours faithfully,
WILLIAM BRUCE, M.D. Aberd.,
Late Member of the General Medical Council.
Dingwall, N.B., March 30th, 1915.

THE "ELIZABETH ROSS" BED.

To the Editor of THE LANCET.

SIR,—To those who have read about the terrible struggle against disease and the efforts made to succour the wounded in Serbia at the present time, nothing can have appealed more strongly to public sympathy than the heroic action of the late Dr. Elizabeth Ross, Tain, who added to the glorious record of the medical profession in this terrible war by giving her life to save that of others. It has been felt that in this town, so closely associated with her and her family, some memorial of such self-sacrifice should be set on foot, and that nothing could be more fitting than the establishment of a bed in the hospital at Kragujevatz, where she died. It is hoped that this scheme will appeal not only to those who knew her personally, but to a much wider public, who will welcome an opportunity of showing their appreciation of her heroic action.

Many of us are debarred from active service either in battle-field or field hospital, but we can all "do our bit" by giving to such schemes as this; and surely no more fitting memorial could be raised to this brave woman's memory than one calculated to benefit the country where she laid down her life and where the need at the present time is such a crying and terrible one. Her brothers and sisters of the medical faculty will doubtless be glad to "place a stone on the cairn" of one who has added glory to the noble records of their profession and sacrificed her life in the execution of its duties.

Anything collected over the sum required will be used either in the establishment of a second bed, or in some way to provide medical or surgical comforts to alleviate the terrible distress in Serbia, which Dr. Ross gave her life to help.

Messrs. Wallace and Fraser, Tain, have kindly opened a list for local subscriptions; and donations, large or small, will also be gratefully received and acknowledged by any of the undersigned.

Yours faithfully,
E. K. MACKENZIE, M.D. Aberd.,
Shandwick House, Tain.
(Mrs.) C. IRWIN SMART,
Drynoch Lodge, Tain.
SUTHERLAND M. ROSS,
Woodbine, Tain.
Tain Ross-shire, N.B., April 5th, 1915.

STOMACH *V.* HEART IN RELATION TO PRÆCORDIAL PAIN AND SUDDEN DEATH.

To the Editor of THE LANCET.

SIR,—Mr. Walter Verdon's letter in THE LANCET of April 3rd bears out in many ways one's own personal observations in relation more especially to intercostal pain and heart disease. His contention, as I read it, is that segmental neurosis of that area of the cord which more immediately subserves the regions in the neighbourhood of the heart itself predisposes to anginal attacks, and, similarly, neurosis in other regions may favour spasmodic alimentary disorders. Such a neurosis may be secondary, I take it, to cardiac trouble, but not necessarily so. In a case I had recently under observation the relation of the pain or algesia to the frequent true anginal attacks from which she suffered could with difficulty be explained by any means other than some such segmental neurosis. This patient, who had well-marked aortic incompetence, had from day to day definite areas of deep and superficial intercostal tenderness, varying in site, as Mr. Verdon observes, from day to day, though at times certain intercostal areas, particularly the fourth, would show algesia at exactly the tender spots peculiar to such nerves—namely, near the vertebra, in the axillary line, and near the sternum respectively. Very occasionally she would be free from such areas. In one such phase this patient, in my presence, had a definite anginal attack relieved after a few minutes by amyl nitrite. Afterwards there was not the slightest tenderness to be made out, contrary to what one ought to expect. The suggestion in such a case was that there was a segmental neurosis or possibly a definite radiculitis (the Wassermann was positive), and that this in the main predisposed to her attacks, which were exceptionally numerous. No stomach symptoms were ever present in this case. She died suddenly a few weeks ago.

The whole question of pain and cardiac disease requires more careful investigation than it has yet received.

I am, Sir, yours faithfully,
Manchester, April 4th, 1915. C. EDGAR LEA.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN (UNIVERSITY OF LONDON).—Dr. F. Wood-Jones, lecturer and head of the department of anatomy, has been granted the title of professor of anatomy in the University of London. The title of reader in pharmacology in the University of London has also been conferred on Dr. Fred Ransom, lecturer and head of the department of pharmacology. The Rose Neville scholarship of £150 a year for four, five, or six years, the Mabel Webb research scholarship of £30 for one, two, or three years, the St. Dunstan's exhibition of £60 a year for three or five years, the Mabel Sharman Crawford scholarship of £20 a year for four years, and the Isabel Thorne scholarship of £30 will be awarded during the summer term. Full particulars can be obtained on application to the secretary. Mr. A. G. R. Foulerton has been appointed lecturer in public health in succession to Professor W. J. Simpson, resigned. The Duchess of Marlborough has accepted the office of honorary treasurer of the extension fund, and Miss Edith Calkin, B.A., has been appointed organising secretary of the fund.

CHARGE OF DISPOSAL OF A BODY.—At the recent Galway Assizes, before Lord Justice Ronan, the Rev. Paul Burrus, Superior of Moyne Park Hospice for Infirm Clergymen, was found "Not guilty" of the charge "that he on Dec. 28th, 1914, having the custody of the dead body of the Rev. John Keane, who had died under circumstances which had rendered the holding of an inquest necessary, did dispose of the body with intent to prevent the holding of an inquest." It appeared from the evidence that on the morning of Dec. 26th Father Keane was found in the yard of the hospice in a dying condition, and that he died a little later. He had been of intemperate habits and rather infirm, and had been locked into his room the previous night by Father Burrus. There was reason to believe that he had fallen from his window. No death certificate was given, the medical officer to the institution being informed merely that Father Keane had died rather suddenly. Similar information was given to the police when an officer entered to make inquiries. In defence it was urged that the accused did not act with the intention of preventing the holding of an inquest. He was a foreigner who was probably imperfectly acquainted with English law and customs.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

THE Fund during the fortnight that has elapsed since we reported upon its progress has received notable accretions.

The large local fund collected in Manchester has now been paid in to the treasurer, making an addition to our resources upon which an influential Manchester committee and Dr. E. M. Brockbank, the energetic secretary, may well be congratulated. Handsome subscriptions have reached the treasurer from Canada and New Zealand, while the funds in the Birmingham and Newcastle districts continue to grow.

The second subscription list of the Scottish Fund is published this week, and shows a total of over £1000.

MANCHESTER AND DISTRICT.

A total of £588 17*s.* 6*d.* has been received, including £104 11*s.* from the pharmacists. The individual subscriptions have all been acknowledged in the press. Any further contributions should be sent direct to London, as this local fund is now closed.

	£	*s.*	*d.*
Dr. George Taylor	2	2	0
Dr. Arnold Gregory (second donation)	1	1	0
Dr. C. Carruthers	1	1	0
Dr. T. M. Popple	1	1	0
Dr. W. Chapman	1	1	0
Dr. J. T. McGlade	1	1	0
Dr. W. Bradley	1	1	0
Dr. M. J. O'Doherty	1	1	0
Dr. C. H. Thompson	1	1	0
Dr. Colley Salter	0	10	6

THE SCOTTISH FUND.

The second list of subscriptions to the Scottish Fund brings the total subscribed to £1015 16*s.* The first list of subscriptions was published in our issue of March 13th.

	£	*s.*	*d.*
Amount previously acknowledged	888	5	6
Dr. R. P. McMorland	1	1	0
Dr. John Dalgleish	5	0	0
Dr. Robert Crawford	2	2	0
Dr. John Alex. Gray	0	10	6
Dr. A. S. Walker	2	2	0
Dr. H. L. Calder	5	5	0
Dr. Alex. Robb	1	1	0
Dr. H. E. Langwill	3	3	0
Miss Fanny Marshall	0	12	6
Dr. D. Gilmour	0	10	6
Dr. Alex M. Malcolmson	2	2	0
Dr. L. W. C. Macpherson	1	1	0
Dr. F. I. Mackintosh	1	1	0
Dr. John Ritchie	1	1	0
Dr. Robert Abernethy	2	2	0
Dr. J. J. Graham Brown	5	0	0
Dr. Frederick Gourlay	1	0	0
Dr. G. R. E. G. Mackay	3	3	0
Mrs. Glen Henderson	0	10	0
Dr. George S. Carmichael	2	2	0
Dr. Ada Miller	1	0	0
Dr. James A. Adams	2	2	0
Dr. John Lindsay	1	1	0
Dr. W. F. Gibb	1	1	0
Dr. Geo. S. Middleton	4	4	0
Dr. E. H. L. Oliphant	2	2	0
Dr. W. J. Richard	1	1	0
Dr. P. S. Buchanan	1	1	0
Dr. R. Barclay Ness	1	1	0
Anonymous	1	1	0
Dr. Jane H. Filshill	1	1	0
Dr. Thos. Barr, per B.M.A. (Central Div.)	3	3	0
Dr. John Wright	1	1	0
Prof. T. K. Monro (additional)	5	5	0
Partick and District Medical Society	5	0	0
Dr. R. Speirs Fullarton	1	1	0
Dr. John Paterson	1	1	0
Dr. Alex. Munro	2	2	0
Dr. J. Maxwell Ross, Dumfries	1	1	0
Dr. Wm. Craig, Cowdenbeath	3	3	0
Dr. Geo. Hunter	3	3	0
Mr. Chas. W. Cathcart	5	0	0
Dr. W. Bruce, Dingwall	0	10	6
Messrs. Boot's Pure Drug Company, Limited, Nottingham	5	5	0
Mr. A. Kennedy, Edinburgh	3	3	0
Glasgow Chemists' Association and Pharmacy Athletic Club, per Mr. Wm. Seivwright, Glasgow	2	0	0
Mr. A. P. McCallum, Edinburgh	2	0	0
West Fife Colliery Chemists' Association, per Mr. C. Hoy, Kelty	1	7	0
Mr. R. Cairnie, Lochgelly	1	1	0
Mr. M. Carmichael, Glasgow	1	1	0
Messrs. John Currie, Limited, Glasgow	1	1	0
Mr. James Finlay, Edinburgh	1	1	0
Mr. J. Fraser, Dumfries	1	1	0
Mr. Jas. Grant, Glasgow	1	1	0
Mr. John Hodge, Dundee	1	1	0
Messrs. W. O. Kay and Son, Cumnock	1	1	0
Mr. T. McKenzie, Inverness	1	1	0
Mr. J. B. McLaren, Kirkcaldy	1	1	0
Mr. J. H. Nicholson, Maxwelltown	1	1	0
Mr. A. W. Ritchie, Montrose	1	1	0
Mr. R. Robertson, Dunfermline	1	1	0
Mr. J. H. Scroggie, Lauder	1	1	0
Messrs. Smith and Govan, St. Andrews	1	1	0
Mr. George Somerville, Edinburgh	1	1	0
Mr. D. N. Wylie, Edinburgh	1	1	0
Mr. R. A. Scott, Motherwell	1	0	0
Mr. Alexr. Davidson, Montrose	0	10	6
Mr. D. Dunnet, Falkirk	0	10	6
Mr. J. S. B. Heddle, Leith	0	10	6
Mr. W. J. Jack, Lochgilphead	0	10	6
Mr. J. G. Sclater, Edinburgh	0	10	6
Mr. F. W. Soddy, Glasgow	0	10	6
Mr. C. Stewart, Kirkcaldy	0	10	6
Mr. Robt. Aitken, Dunbar	0	10	0
Miss R. R. Bell, Edinburgh	0	10	0
Mr. D. Black, Glasgow	0	10	0
Mr. A. J. Clark, Edinburgh	0	10	0
Mr. J. Smith, Aberlour	0	10	0
Mr. D. Walker, Lockerbie	0	10	0
Miss M. D. Hutchison, Edinburgh	0	9	0
Mr. P. S. Beatton, Port Glasgow	0	7	6
Mr. W. C. D. Robertson, Cockenzie	0	6	0
Mr. W. Barrie, Cambuslang	0	5	0
Mr. C. P. Bayne, Innerleithen	0	5	0
Mr. W. J. Cameron, Edinburgh	0	5	0
Mr. S. P. Crowden, Edinburgh	0	5	0
Mr. R. Fraser, Portobello	0	5	0
Mr. A. Gold, Larkhall	0	5	0
Mr. A. Inglis, Edinburgh	0	5	0
Mr. A. MacDonald, Dunfermline	0	5	0
Mr. Peter Nisbet, Leith	0	5	0
Mr. A. A. Porteous, Lerwick	0	5	0
Mr. Findlay Stuart, Broxburn	0	5	0
Mr. J. M. Turner, Falkirk	0	5	0
Mr. Wm. Walker, Dundee	0	5	0
Miss E. R. Hodge, Dumbarton	0	2	6

THE FORTNIGHT'S SUBSCRIPTIONS.

The subscriptions received by Dr. Des Vœux up to Tuesday evening last, in addition to those previously acknowledged, and not including money collected by the Scottish and Irish Funds, are as follows:—

	£	*s.*	*d.*
Dr. Carey Coombs	2	2	0
Lt.-Col. G. T. Langridge, R.A.M.C.	1	1	0
Tower Hamlets Division B.M.A. (per Dr. W. H. F. Oxley, Hon. Sec.) (third donation)—			
Dr. McCrae	1	1	0
Dr. Rosewarne	2	2	0
Dr. Arthur R. Randle	1	1	0
Southern Branch B.M.A. (per Dr. J. Green, Hon. Sec.)—			
Dr. E. L. Cambie	2	2	0
Dr. J. T. Leon	2	0	0
Capt. W. Carling, R.A.M.C.	1	1	0
Mr. Henry Rundle	1	1	0
Dr. L. K. H. Hackman	1	1	0
Dr. T. A. Mulcahy	1	1	0
Dr. Thos. Baker	1	1	0
Dr. T. S. Pennington Sparrow	1	1	0
Dr. A. E. Peters	1	1	0
Dr. C. D'A. Collings	1	1	0
Dr. H. C. Major	2	2	0
Dr. Hutton Castle	0	10	6
Brigade-Surgeon J. W. Wilson	1	1	0
Dr. J. A. Gibson	1	1	0
Col. W. E. Webb	1	1	0
Dr. Alfred Hill	1	1	0
Lt.-Col. Le Mottée	1	1	0
Brig.-Surg. W. M. Harman	3	3	0
Dr. O. V. Payne	1	1	0
Dr. J. B. Wood	0	10	6
Mr. C. Gordon Brodie	2	2	0
Lt.-Col. Dimmock	2	2	0
Dr. C. H. Fowler	1	1	0
Dr. D. A. Sheahan	3	3	0
Dr. E. Lawrie Robinson	1	1	0
Dr. H. J. Gauvain	1	1	0
Fleet-Surg. K. Hurlstone Jones, R.N.	0	10	6
Dr. Charles H. Bois	0	10	6
Capt. J. A. Cruickshank, I.M.S.	1	1	0
Major T. Hunter, I.M.S.	3	0	0
Birmingham Local Committee (per Dr. R. Saundby) (thirteenth donation, total £338 11*s.* 3*d.*)—			
Mrs. Allison	10	10	0
North of England Branch (per Dr. James Don and Mr. A. S. Percival, Hon. Secs.) (6th donation, total £323 14*s.*)—			
Dr. W. Hay	1	1	0
Dr. A. S. Hedley	1	1	0
Dr. H. A. Edwards	1	1	0
Dr. Henry Smith	2	2	0
Dr. G. E. Welford	1	1	0
Dr. John Brown	1	1	0
Dr. J. W Blandford	2	2	0
Dr. W. Petter	1	1	0
Dr. J. R. Baumgartner	2	2	0
Dr. George Murray	1	1	0
Dr. G. R Philipson	1	1	0
Dr John Wishart	1	1	0
Dr. Thos. F Johnston	0	10	6
Dr. T. Buckham	2	2	0
Dr. G. H. Norris	5	5	0
Dr. R. Parry	2	2	0
Dr. Wm. Allen	1	1	0
Dr. C. L. Fraser	1	1	0
Dr. G. B. Morgan	1	1	0
Dr. H. de Legh	1	1	0
Dr. T. A. McCullagh	1	1	0
Dr. Wm. Scott	1	1	0
Dr. A. M. G. Walker	1	0	0
Dr. Dora E. L. Bunting	1	0	0
Dr. Martin	1	0	0
Prof. Hutchens	2	2	0
Dr. Hart Jackson	0	10	6
Sir G. H. Philipson	5	5	0
Dr. R. Morris	1	1	0
Dr. R. McGregor	1	1	0
Dr. S. Basham	2	2	0
Dr. Dewar	1	1	0
Dr. A. Brown	1	1	0
Dr. G. Lloyd	1	1	0
Dr. and Mrs. A. Campbell	2	2	0
Drs. H. and S. Russell	4	4	0
Dr. A. Herbert Peters	2	0	0
Dr. R. B. Reed	1	1	0
Dr. A. Walker	1	1	0
Dr. U. B. Walker	1	1	0
Dr. C. H. Walker	1	1	0
Dr. G. M. Coull	1	1	0
Chichester and Worthing Division B.M.A. (per Dr. A. Morton Palmer, Hon. Sec.) (3rd donation)—			
Dr. R. M. Goring	1	1	0
Dr. D. Hethcote	1	1	0
Dr. G. F. Briggs	2	2	0
Mr. H. Crompton	1	1	0
Mr. F. W. Scanlon	0	10	6
Mr. Waldron Griffiths	0	10	6
Buckrose Pharmacists Asso. (per Mr. P. Hawkins)	1	10	0
Mr. A. Chapman	0	8	9
Mr. G. Knowles	1	1	0
Mr. J. H. Hart	1	1	0
Lanarkshire Pharmacists' Asso. (per Mr. J. Lohoar)	1	1	0
Messrs. Fairchild Bros. & Foster	52	10	0
Bath Pharmaceutical Asso., collected by Mr. D. A. Evans (per Mr. W. J. Hallett)—			
Messrs. Steele & March and Staff	1	8	6
Messrs. Hawes, Whiston & Co.	0	10	6
Mr. Luther Wilson	0	10	6
Messrs. A. C. Olds and Co.	0	10	6
Messrs. Tylee and Cooper	0	10	6
Messrs. Appleby and Co.	0	10	6
Mr. W. J. Hallett	0	10	6
Messrs. Davies and John, Ltd.	0	10	6
Messrs. Wilkinson and Dickinson	0	10	6
Mr. H. C. Broad	0	5	0
Mr. H. Norris	0	5	0
Mr. J. L. S. Gordan	0	10	0
Mr. A. B. Hall	0	5	0
Mr. E. Loveless	0	10	6
Mr. H. W. Gedge	0	10	6

	£	s.	d.
Mr. H. C. Gray	0	10	6
Mr. A. E. Mills	0	10	6
Mr. G. T. Kingston ...	0	10	6
Messrs. Pinch and Co.	0	10	6
Mr. R. H. Moore ...	0	10	6
Messrs. Hodders, Ltd., Staff	0	12	6
Messrs. Cater, Stoffell, and Forth, Ltd. ...	0	10	6
Dr. L. S. Clark	1	1	0
Warrington Division, B.M.A. (per Dr. J. A. Murray, Hon. Sec.). Result of Lecture at Padgate, organised by Dr. J. Bennett, Chairman of Division, Gas and Lantern provided by Mr. Hill	10	7	6
Dr. Arthur Whitfield (second donation, total £7 7*s.*)	5	5	0
Harrow Division, B.M.A. (per Dr. C. M. Pennefather, Hon. Sec.)—			
Dr. B. H. Barton ...	0	10	6
Dr. A. H. Bindloss ...	1	1	0
Mrs. Brady, M.B. ...	0	10	6
Dr. Andrew Brown ...	0	10	6
Dr. T. Compton	1	1	0
Dr. J. D. Cooke	1	1	0
Dr. W. S. Darby... ...	0	10	6
Dr. J. Davidson	0	10	6
Dr. Godkin Downes ...	1	1	0
Lt.-Col. E. F. Brockman Drake...	0	10	6
Dr. H. E. Dyson... ...	1	1	0
Dr. Cavendish Fletcher	1	1	0
Dr. C. E. A. Goddard	1	1	0
Dr. H. R. Harley ...	1	1	0
Dr. H. J. Hildige ...	0	10	6
Dr. R. E Humphry ...	0	10	6
Dr. M. O. Hunter ...	0	10	6
Dr. M. F. Huston ...	0	10	6
Dr. H. S. W. Jones ...	1	1	0
Dr. T. S. Kerr	1	1	0
Dr. S. H. A. Lambert	1	1	0
Dr. G. A. B. Levick ...	2	2	0
Dr. R. H. Martin ...	1	1	0
Dr. F. M. Matheson ...	0	10	0
Dr. H. Crichton Miller	2	2	0
Dr. T. T. O'Callaghan.	1	1	0
Dr. C. M. Pennefather	1	1	0
Dr. R. L. Romer... ...	0	10	0
Dr. R. J. Stilwell ...	1	1	0
Professor G. D. Thane	3	3	0
Dr. W. D. Traill-Thompson...	1	1	0
Dr. F. E. Walker... ...	0	10	6
Dr. A. H. Williams ...	1	1	0
Dr. F. H. Woodroffe .	0	10	6
Dr. A. K. Baxter	1	5	0
Dr. Agatha Porter... ...	0	10	6
Dr. C. Oldfield (per Dr. Barrs)	5	5	0
Dr. C. R. Benson	1	1	0
Mr. H. Secker Walker (per Dr. Barrs)	3	3	0
Barnsley Division, B. M. A. (per Dr. R. F. Castle) (second donation)	7	7	0
Dr. John Fawcett	3	3	0
Canadian Committee (per Dr. J. Gibb Wishart, Hon. Treas.) (fourth donation, total £908 5*s.* 3*d.*)...	400	0	0
Rotherham Division, B.M.A. (per Dr. Knight, Hon. Sec.)—			
Dr. Anderson	1	1	0
Dr. Elliott	1	1	0
Dr. Jago	1	1	0
Dr. Knight	1	1	0
Dr. Lodge	1	1	0
Dr. Picken	1	1	0
Dr. Reid	1	1	0
Dr. Riddell	1	1	0
Dr. Kenny	1	1	0
Dr. Slack	1	1	0
Dr. Williams	1	1	0
Dr. Sedgwick	1	1	0
Dr. Collinson	1	1	0
Brussels Medical Graduates' Asso. (per Dr. Major Greenwood, Treas.) (seventh donation, total £126 14*s.* 6*d.*)	2	2	0
Anonymous from Dunedin (per Bank of New Zealand) (third donation, total £605)	200	0	0
Mr. S. T. Briggs	0	5	0
Mr. A. E. Grimwade ...	1	1	0
Miss A. McNicol	0	10	0
West Ham, East Ham, and Metropolitan Essex District Asso. of Pharmacists, Proceeds of Annual Dinner (per Mr. W. T. Johnson) ...	7	7	0
Western Pharmacists Asso., collected by (per Mr. W. E. D. Shirtliff) (second donation, total £125 14*s.*) ...	5	14	0
Norwich Pharmacists' Asso., collected by (per Mr. W. J. Lacey) (third donation)—			
Mr. H. E. Taylor ...	1	1	0
Mr. J. E. H. Watson ...	0	13	0
Birmingham Pharmaceutical Asso., collected by (per Mr. F. Smith) (sixth donation, total £128 12*s.*)—			
Mr. H. O. Lloyd ...	1	1	0
Manchester and District Subcommittee (per Dr. E. M. Brockbank, Hon. Sec.)	574	5	7
Dr. G. H. Pinder ...	2	2	0

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham-gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Ltd. £9700 had passed into the treasurer's hands by Tuesday last, the sum not including the Scottish and Irish Funds.

THE APPEAL FOR SURGICAL INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge the receipt of surgical instruments kindly contributed by Mr. T. F. Blaker, of Brighton, and by Messrs. Claudius Ash, Sons, and Co., Broad-street, W.C.

AT a meeting of the council of the Hampstead General and North-West London Hospital held last Wednesday Mr. Conrad W. Thies, who was present by invitation, received formal thanks for his voluntary help during the absence of the late secretary, Mr. A. E. Thomas, who was killed in the war, and pending the appointment of a successor. The council passed a resolution acknowledging the gratitude of the charity to Mr. Thies for his great assistance, and at the same time begged his acceptance of a gold watch, with suitable inscription, as a slight token of their appreciation of his services during their time of difficulty.

The War.

THE NEED FOR MEDICAL OFFICERS IN THE ARMY: A STATEMENT BY SIR ALFRED KEOGH.

AT a meeting of the Special Committee of Chairmen of Standing Committees of the British Medical Association, held on Thursday, April 1st, Mr. T. Jenner Verrall, chairman of Representative Meetings, presiding, Sir Alfred Keogh, Director-General of the Army Medical Service, was present upon invitation and made an important statement upon the need by the army of more medical officers.

The civil medical profession, he said, had given the army so much generous and self-sacrificing assistance since the outbreak of the war that he regretted to be compelled to make further demands on it. But it was necessary to look ahead and make adequate provision to safeguard the health of the home army when the Expeditionary Force was increased in strength to such an extent that every commissioned medical officer fit for active service would be required for service on the continent. It was anticipated that this increase would take place in the course of the next three or four months, so that the call on medical resources was urgent. Sir Alfred Keogh suggested the following means by which the civil practitioner could come to the aid of the army:—

Whole-time Service.

1. I would urge all those who are under 40 years of age and who are fit for active service to apply for temporary commissions in the R.A.M.C. if their civil obligations will allow them to do so. Such men would have an opportunity of seeing active service on the continent or elsewhere where we have fighting armies. We are especially in need of young general practitioners who are willing to go anywhere and do anything in the way of duty with troops or with medical units.

There are also vacancies for men who have specialised in surgery, bacteriology, medicine, X ray work, and ophthalmic surgery. They would probably eventually be appointed to the large hospitals of 1040 beds each which are being fitted out for service with the Expeditionary Force, but they would be required to do a certain amount of work in a military hospital in this country first, so as to familiarise them with the routine of a military hospital.

2. Men over 40 years of age are not being sent abroad at present, but their services would be of the greatest value to the military authorities in this country, and many of them would probably go overseas for hospital work later on.

Part-time Service.

So much for men who can offer themselves for whole-time and general service, and who are therefore eligible to receive temporary commissions. We now come to men who, on account of age or health, or local obligations, are unable to accept these larger responsibilities. I will divide these into three classes:—

1. Those who can give so many hours a day to military work and give a certain fixed time on each day. These men would be a great help in doing work in military hospitals, seeing men in combatant units reporting sick with minor ailments, and looking after the sanitation of camps, barracks, and billets.

2. Men who could not devote a specific time to military work, but who would be willing to attend

the wives and children of officers and soldiers as part of their general practice at good rates of pay.

3. Men who could arrange to help the neighbouring practitioners who have undertaken military duties, and who would do so without encroaching on their practices, and under terms which would have to be settled by mutual agreement.

It will be seen that every medical man in the country can "do his bit" to help the Government to bring this great war to a successful issue, and from our previous experience we can trust them to respond generously to the appeal we are now making to their patriotism.

A MOTOR OPERATION THEATRE.

A highly convenient operating theatre contrived within a motor wagon has been designed by Captain G. H. Colt, R.A.M.C., assistant surgeon to the Royal Infirmary, Aberdeen.

The chief points in connexion with this motor operation theatre are that it can be easily taken wherever it is required, that its dimensions are reasonable, that it can carry all its personnel, and that its price is not high. The chassis is of the commercial vehicle type, 20–30 h.p., the wheel base being 11 ft. 6 in.; the body is 9 ft. 6 in. long, 6 ft. 6 in. wide; the cab is 3 ft. 6 in. long, 6 ft. 6 in. wide; the height of both is 7 ft. over all, and the weight carried, including five persons, is about 2⅛ tons, suitably arranged as regards steering facilities. A clear space of at least 2 ft. 9 in., and more if required, is available as a stretcher-way.

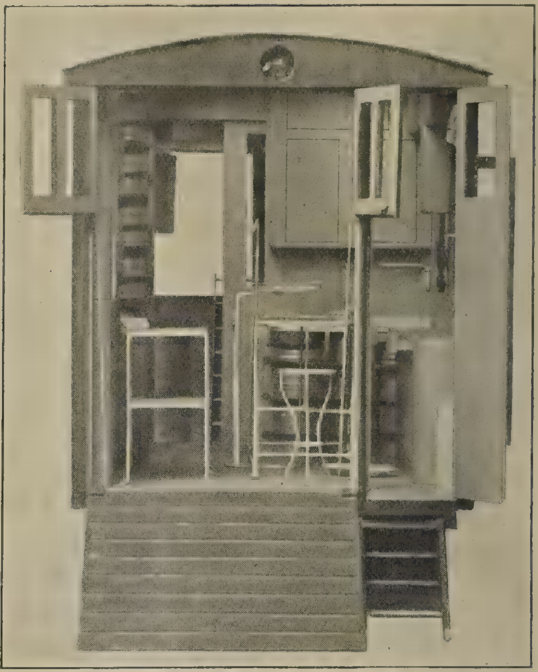

FIG. 1.—Motor operation theatre. Back view.

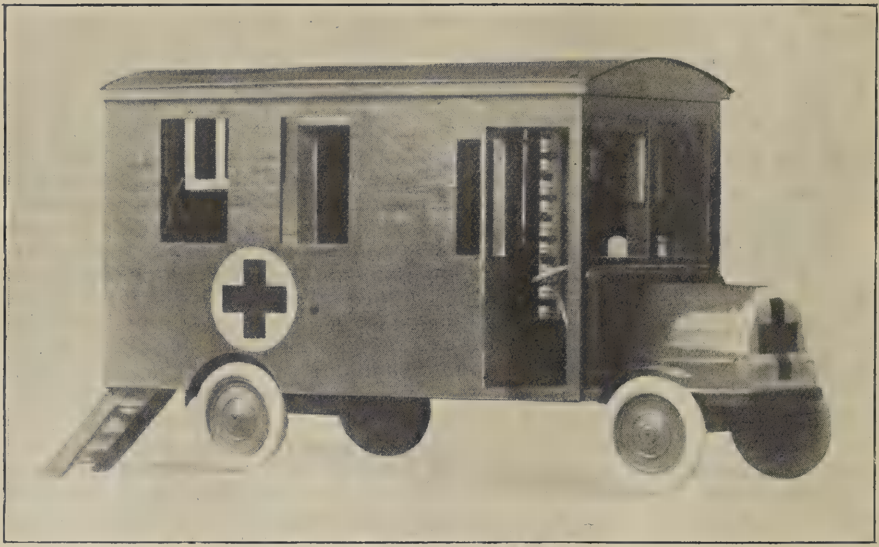

FIG. 2.—Motor operation theatre. Side view.

All boiling and sterilising and drying of washing is done in the cab (or partly outside the theatre) by paraffin burners. The cab is separated by a sliding door from the body of the theatre, thus eliminating phosgene gas, a most important point as regards the efficiency of the personnel. Cold sterile water is obtained in the body of the theatre either by tabloid hypochlorite in 15 minutes or by filling the four vessels from the boiler. The storage room is 34 cubic feet, providing for, say, 60 towels, 15 gowns, wool, gauze, bandages, and instruments. In addition a minimum of 16 full-sized drums, shelves, two drum stools containing plaster of Paris, and a trolley are provided. Seven cubic feet of space are available under the operation table if required. Two 20-gallon water-tanks are carried.

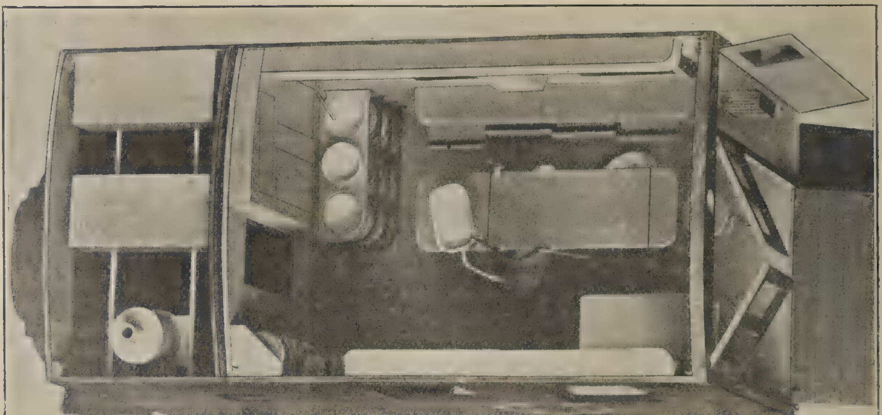

FIG. 3.—Motor operation theatre seen from above.

Electric light can be run for six hours off accumulators. A minimum time of 15 minutes is available for recharging off the engine between operations if required. Ventilation is by windows and an electric fan, causing an indraught of filtered air. Closely fitting flanges to the windows keep out dust, and the tail board is arranged ingeniously so that the outer surface is always outside and dirt is not tipped into the theatre when it is closed up. The back of the car during travelling is covered by American cloth.

Washing, drying, and sterilising are provided for, and so long as supplies arrive regularly the theatre can be kept in constant use to serve casualty clearing stations and to deal with cases of grave abdominal injury, head cases, and large amputation or wound cases. It is not suggested that it should be used for any case that can be removed without risk of further complications ensuing or of pain and shock.

The cost of the theatre is £1100, the chassis costing £600, the body about £200, and the electrical fitting £70, leaving £230 for stores, fittings, and instruments, a sum which need not be spent or can be exceeded.

MENTIONED IN DISPATCHES.

The following names have been added to the list of officers recommended for gallant and distinguished service in the field in the dispatch published in the *London Gazette* on Feb. 17th (see THE LANCET, Feb. 20th, p. 406): Major S. L. Cummins, M.D., R.A.M.C., Captain C. G. Browne, R.A.M.C., and Lieutenant (temp.) G. W. Milne, M.D., R.A.M.C.

In the same list, as previously published, the following corrections are notified with reference to the officers of the Royal Army Medical Corps: Lieutenant (temp.) J. B. Mathews should read Lieutenant (temp.) J. B. Matthews; Lieutenant R. B. Philippo should read Lieutenant R. B. Phillipps; and Lieutenant R. E. Pirrie, M.B. (killed in action), should read Lieutenant R. E. Porter, M.B. (killed in action).

THE CASUALTY LIST.

Since our last issue the casualties reported in our Expeditionary Force include the names of Lieutenant E. Stratford, R.A.M.C., and Lieutenant A. N. Smith, R.A.M.C., both wounded.

THE WATER-SUPPLY OF THE BELGIAN ARMY.

A representative of the Belgian Soldiers' Fund writes on the problem of the water-supply of the Belgian army. Owing to the floods the water, obliged to filter through land soaked in blood and strewn with dead, is in a dangerous condition. In a few weeks the fierce sun will be pouring its rays on a devastated country. A rapid advance of the allied troops is expected, when the forced marches may cause urgent thirst and the tired men, unable to resist the temptation, will drink at the roadside dyke. The terrible conditions that exist in Serbia are due mainly to lack of sanitary organisation in the earlier months of the war. Belgium has no lack of willing men, but does lack funds to place the necessary arrangements at the service of the army and the Government to keep a permanent supply of pure water always at hand till danger is passed. The Belgian Soldiers' Fund has acquired 100 portable 50-gallon boilers complete with pony and harness which are being delivered now, but what is that among so many? As the boilers take a week or two to manufacture the order must be given at the earliest possible date. The Belgian Soldiers' Fund deals entirely with providing food comforts, clothing, and pure water for the Belgian Army and for the widows, orphans, and families of their soldiers. All consignments are made direct to M. de Broqueville, Minister of War. Cheques should be made out to the "Belgian Soldiers' Fund" crossed on Lloyd's Bank and addressed to the Secretary, 17–19, James-street, Oxford-street, London, W.

THE MEDICAL PLIGHT OF SERBIA.

The urgent appeal of Serbia for medical officers to attend the Serbian wounded, preferred through Sir Lomer Gouin, Premier of the Province of Quebec, by the Serbian Royal Legation in London, has resulted in the following Canadians volunteering:—

Dr. Albert Paling, Winnipeg; Dr. J. M. Casserly, St. Thomas, Ont.; Dr. W. J. McAllister, Calgary, Alberta; Dr. A. W. M. Leclair, Letellier, Man.; Dr. O. S. Waugh, Winnipeg; Dr. D. C. Hart, Kipling, Sask.; Dr. Arthur Macaan, Birtle, Man.; Dr. R. L. Hutton, Rosthern, Sask.; Dr. J. Hetherington, Carievale, Sask.; Dr. Thomas H. Smith, North Sydney, N.S.; Dr. James Peake, Winnipeg; Dr. W. A. Dymond, Winnipeg; Dr. Alex. Osmanley, Toronto; Dr. W. P. Mackasee, Springhill, N.S.; Dr. O. A. Cameron, Stratford, Ont.; Dr. A. H. Bowen, London, Ont.; Dr. D. E. Scott, London, Ont.; Dr. J. V. Brandon, Winnipeg; Dr. L. Zealand, Winnipeg; Dr. J. Baxter, Chatham, N.B.; Dr. G. Degrys, Abenakis Springs, Que.; Dr. Alfred Whitmore, Cabri, Sask.; Dr. V. Bourgeault, Marcelin, Sask.; Dr. P. E. Lavoie, Marcelin, Sask.; Dr. C. M. Keiller, London, Ont.; Dr. G. E. Duncan, Vernon, B.C.; Dr. M. F. Lucas, Dryden, Ont.; Dr. J. Murray, Winnipeg; Dr. P. A. Guay, South Shipshaw, Que.; Dr. E. E. Robrabough, Sanford, Man.; Dr. B. A. Hopkins, Blaine Lake, Sask.; and Dr. J. B. McKay, Kitscoty, Alberta.

Several nurses have also volunteered for the Serbian service.

The third and fourth units of the Serbian Relief Funds Hospitals left London on April 1st. The third unit, Mrs. St. Clair Stobart's Hospital, is staffed almost entirely by women. There are 16 nurses, 15 women orderlies, 7 women members of the medical and surgical staff, besides 6 male orderlies and the treasurer. Its destination is Salonica. The fourth unit, the British Farmers' Hospital, under the administration of Mr. L. M. Wynch, C.I.E., has a tent hospital to contain 300 beds, with baths, ice plant, and everything requisite for serum treatment. It has four medical men, a secretary, a matron, 18 nursing sisters, 13 female and 4 male orderlies, and a dispenser, and its destination is Skoplje, where there are said to be some 3000 cases of typhus fever.

THE PRINCESS CHRISTIAN HOSPITAL TRAIN.

The Princess Christian Hospital Train is due entirely to the initiative and energy of Her Royal Highness, by whom also the necessary funds have been raised. It is the successor of the train which, under the same name, was sent to South Africa in 1899. Sir John Furley and Mr. William J. Fieldhouse, who designed the latter train, are responsible for the present one also. The difficulties in the present case were increased by the necessity for consulting different bodies. The War Office laid down that hospital trains should accommodate 400 patients; the French railway engineers required all questions relating to under-carriages, couplings, brakes, lighting, and so forth, to be submitted for their approval. A joint railway committee was accordingly formed of managers of the leading English railway companies and French railway engineers, with the result that the train as it stands now satisfies the requirements of the different authorities.

The arrangements of the train are as follows:—The first coach contains an office, with bed, fittings, desk, safe, &c., for the quartermaster-sergeant, partitioned off from a ward containing 30 beds. Coaches 2 and 3 have each

36 beds, with lavatory and lockers. Coach 4 has beds for 12 orderlies with two lockers and lavatory; a kitchen fully equipped and a 60 gallon hot-water tank, also store-room for linen. The first part of Coach 5 provides sleeping accommodation for the nurses, and nurses' and doctors' dining-rooms, also office and sleeping accommodation for the P.M.O. Then come the surgery and a sleeping room for doctors. Coaches 6 and 7 are similar to 2 and 3, and Coach 8 contains beds for 12 orderlies, a kit store, and a second kitchen. In accordance with the War Office desire, four other coaches, each for 50 sitting-up patients, have been added to the original eight, thus making with the engine and brake-van a train of 14 vehicles with a total length of about 700 feet. There is an ample supply of water throughout the train and gas and electric lighting, while in case of these failing Gimble candle lamps are placed in each carriage. The equipment of this train is ample and excellent, so that the train can, if necessary, be used as a stationary hospital on wheels.

THE FRENCH RED CROSS HOSPITAL AT ROYAUMONT.—Our own correspondent sends the following description of the military hospital at Royaumont:—"The Abbey of Royaumont dates from the thirteenth century, and has been occupied by religious communities from its foundation until some ten years ago. It is beautifully situated in the picturesque valley of the Oise in extensively wooded grounds. Its peacefulness renders it an ideal site for a military hospital. The abbey is built round three sides of a central court with cloisters, and two of these wings have been easily adapted to the needs of a modern hospital. On the ground floor are three medium-sized and two large wards, kitchen, lavatories, and bathroom. All have high-arched stone roofs; one, the ancient refectory, is oak-panelled, with windows facing south and west. New patients during their first days remark that on awaking from sleep they think they are in a church, so peaceful and so dignified are the arched roofs, stone walls and pillars, and the latticed glass of the tall windows. Two great staircases of oak lead to the first floor, where the ancient library of the monks, another stately hall, has been converted into a ward. Its windows look north and south; on one side the windows open on the terrace above the cloisters, where convalescents can lie in the sunshine. On the same floor in adjacent rooms are the X ray department, the dispensary, and the operating and sterilising rooms. On the same floor at a higher level are two long corridors with convenient bedrooms for the nurses and the medical and administrative staff; on the second floor are isolation chambers, storerooms, and bedrooms, and rooms for mending and sorting of clothes and arms. There is electric light throughout; hot water and anthracite stoves for heating have been inserted. Three motor ambulances fetch the wounded daily from the evacuation station at Creil. The first set of patients arrived about the middle of January; in March 161 entered; 106 were discharged. Shrapnel and bullet wounds form the majority of the cases which reach Royaumont, usually from 12 to 40 hours after being wounded. All wounds arrive with a clean, excellent first dressing, and the men have already received an injection of antitetanic serum. As a consequence, no cases of tetanus have been seen at Royaumont. The shrapnel wounds tend to become septic, and are treated at once with hydrogen peroxide and mercurial dressings. When examination by X rays reveals the presence of a foreign body it is localised by Hampson's method, and extraction is facilitated by the use of the telephone probe. Bullets embedded deeply in the muscles are rarely septic, and when left alone frequently give rise to so little trouble that their removal is unnecessary and inadvisable.

The military medical authorities have made a request to the chief surgeon at Royaumont that the number of beds be increased from the original 100 to 200—a request which is the more flattering, seeing that in January, when the hospital opened, it received no eager welcome and for some weeks had three-fourths of its beds unoccupied. Miss Ivens, M.B., M.S., is head surgeon; Miss Winifred Ross and Miss Ruth Nicholson act as assistant surgeons; Mrs. Berry and Miss Deborah Hancock as physicians; and the X ray and electro-therapeutic department is under the care of Dr. Agnes Savill. The hospital, whose official title is Hôpital Auxiliaire, No. 301, of Royaumont, Asnières sur Oise, is under that branch of the French Red Cross known as Secours aux Blessés Militaires."

CANADIAN BASE HOSPITALS.—The following is the staff for the base hospital contributed by the University of Toronto, which has been accepted by the War Office: Administrative staff: Lieutenant-Colonel James A. Roberts, F.R.C.S., commandant; Major William B. Hendry, second in command; and Captain M. J. L. Yellowlees. Surgical staff: Professor A. Primrose, Dr. F. N. G. Starr, Dr. Walter McKeown (of equal rank), Dr. E. S. Ryerson, Dr. Geo. E. Wilson, Dr. W. J. O. Malloch, Dr. R. Gaby, Dr. F. W. Watts, Dr. J. G. Gallie, Dr. H. Wookey, and in addition Dr. F. W. Marlow and Professor B. P. Watson. Medical staff: Dr. Andrew R. Gordon and Dr. Graham Chambers (of equal rank), Dr. D. McGillivray, Dr. Harold C. Parsons, Dr. D. King Smith, Dr. C. F. McVicar, Dr. Geo. F. Boyer, Dr. F. R. D. Hewitt, Dr. R. G. Armour, and Dr. J. H. McPhedran. Nose and throat: Dr. Gilbert Royce. Eye and ear: Dr. Wm. H. Lowrey. Genito-urinary: Dr. Robert Pearse. Sanitation: Professor John A. Amyot. Laboratory: Dr. Duncan Graham, Dr. N. C. Sharpe, Dr. A. A. Fletcher, and Dr. C. J. Imrie. Dental staff: Dr. George Dow. This staff has been selected from the various hospitals of Toronto; in addition some 80 nurses will also be selected.—The base hospital contributed by McGill University, which will be known as No. 3 McGill Hospital, and which also has been accepted by the War Office, will be under the command of the Dean of the Medical Department, Lieutenant-Colonel H. S. Birkett, with Lieutenant-Colonel H. B. Yates as second in command. The personnel was announced by our Canadian correspondent on March 20th.

THE FEEDING OF TROOPS IN THE FIELD.—Our Paris correspondent writes: Dr. Basset, inspector of provision factories in the 18th district, has pointed out that there is at present too exclusive an amount of flesh eating, for the French soldier refuses rice and makes but little use of bread. To remedy this state of things he suggests the preparation of four new forms of preserved foods, forming nutritious, hygienic, and agreeable dishes, the preparation of which is simple and practical. These dishes are a beef hash with vegetables, a *ragoût* of beef with vegetables, a *cassoulet* (a Languedoc dish of *haricots blancs* with pieces of goose, duck, mutton, or pork), and a mince of pork cooked in fat.

THE DEARTH OF MEDICAL OFFICERS.—A correspondent writes to us in reference to Sir Alfred Keogh's appeal, which appeared in THE LANCET of March 13th, to say that there are several reasons why medical men do not come forward. Among others he has heard the following: 1. Many now serving as combatants to fill up a niche, which they prefer, are willing to serve professionally from a sense of duty; naturally they will not accept a rank lower than their present one, and for this reason they are refused. 2. Medical men of many years' standing and in a good professional position very naturally object to be placed under men half their age and with no professional experience to speak of. 3. The offer of £8 8*s*. a week without any allowances is hardly attractive to a man, however patriotic he may be, who has to pay at least that amount per week to carry on his practice, in addition to the fact that his practice only earns about a quarter of what it should earn, and that his household and most of his professional expenses remain as before—the loss of most of his practice is hardly compensated for by a donation of £60 at the end of his service. A man who gives professional service is worth more than one who gives amateur service. The heads of the Royal Army Medical Corps do not know anything about private general practice, and cannot be expected to think of these things, but until they do it will be difficult to get men to come forward.

RE-EDUCATION OF CRIPPLED SOLDIERS.—The Colony for Cripples at Chailey, Sussex, has instituted military wards for convalescent soldiers where the men are taught various crafts in conformity with the disabilities imposed on them by their injuries. An appeal for special support was endorsed by the Bishop of London, who paid a surprise visit to the camp before going to the front for Easter. Things especially desired as gifts are a gramophone and records, a piano, bagatelle boards, a revolving shelter, books and magazines, and the loan of motor-cars. Communications may be addressed to Mrs. C. W. Kimmins, The Old Heritage, Chailey, Sussex.

HELP FOR THE HOSPITALS.—Lady Lawley, honorary secretary of the Queen Mary's Needlework Guild, has made a public announcement that with the approach of summer the necessity for woollen comforts no longer exists, nor for clothing for women and children; but owing to the duration of the war and the large number of casualties there is an increased demand for all necessaries and comforts for wounded and convalescent soldiers in the hospitals at home and abroad, for which several thousand more beds have to be equipped. Ladies are therefore requested to devote their energies to making for hospital use shirts, pyjamas, slippers, towels, bandages, nightshirts, dressing gowns, sheets, feather pillows, lint, together with socks, which are always useful.

CARDIFF MENTAL HOSPITAL.—The committee have agreed to hand over this hospital, situated at Whitchurch, to the War Office for use as a military hospital. The conditions, among other things, arrange that the Army Council is to make good expenditure or loss sustained. The War Office is to become responsible for the care and treatment, the hospital being handed over with its entire staff as a going concern. Any extra staff required will be appointed by the War Office. The scales of board and living for the staff are to be not less favourable to the staff than those at present obtaining. The medical superintendent will be the officer in charge under the direct control of the War Office. He will make contracts for supply and carry on the business side of the administration, opening a separate account and presenting his monthly accounts to the War Office through the Board of Control. The taking over of the hospital is to entail no expense whatever to the Cardiff ratepayers, and this includes the removal of patients to other mental hospitals and the charges made for their maintenance.

THE TRAINING OF WAR PROBATIONER NURSES.—The army appeal for nurses is meeting with a wide response. St. Bartholomew's Hospital, which has arranged a three months' course for war probationers, to fit them for service under fully qualified nurses in military hospitals, in accordance with the expressed desire of the Director-General of the Army Medical Service, as mentioned in our columns on April 3rd (p. 728), has received over 400 applications, of which not more than 40 could be accommodated. University College Hospital has also arranged for three and six months' courses for the same purpose.

READING AS A HOSPITAL CENTRE.—The War Office has taken over the Reading workhouse and several large elementary schools with the object of making Reading an important hospital centre. The transport service is to be organised entirely by the Berkshire Automobile Club, which will provide a staff of drivers.

DISINFECTANTS NEEDED FOR MONTENEGRO.—The prevalence of epidemics of typhus and typhoid fever in Montenegro has caused Sir Edward Grey to issue an appeal, through Sir J. Roper Parkington, for financial aid to supply the large quantities of disinfectants that will be required, the transit of which, it is believed, will be expedited by the Italian Government. Donations can be sent to the Duchess of Rutland, 16, Arlington-street, W., or to Lady Parkington, 58, Green-street, Park-lane, W.

THE Cross of Chevalier of the Order of Leopold has been conferred by the Belgian Government on Miss Beatrice Dormer Maunder, director of the Anglo-Belgian Hospital at Rouen, in recognition of her services since the outbreak of the war, first at Ostend and subsequently at Rouen.

THE Indian Field Ambulance working at Neuve Chapelle received the special commendation of Lieutenant-General Sir James Willcocks, commanding the Indian Army Corps in France.

BRISTOL ROYAL INFIRMARY.—At the annual meeting of the supporters of the Bristol Royal Infirmary on March 23rd Sir George White, the President, congratulated the governors on their prescience five years ago in placing the Royal Infirmary at the disposal of the nation to constitute the 2nd Southern Base Hospital for the sick and wounded in case of war. The report stated that at the end of 1914 no fewer than 1637 military patients had been admitted and a very large number of military out-patients treated, the committee having agreed with the War Office to undertake the feeding, cooking, provision of drugs and dressings, and laundry. In addition accommodation had also been found for many wives and families of soldiers coming from India and the colonies. Nevertheless, the treatment of civil patients had gone on as usual. Practically the whole of the honorary staff had been called up for military service, while of past and present sisters and nurses 103 were serving in military hospitals at home and abroad. Lieutenant-Colonel J. Paul Bush, C.M.G., R.A.M.C.(T.), expressed thanks on behalf of the War Office for the way in which the president and committee had responded to the calls made upon them.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the First Professional Examination of the Conjoint Board, held on March 23rd, 24th, 25th, and 26th, the following candidates were approved in the undermentioned subjects:—

Chemistry and Physics.—John Griffith Barrie, Guy's Hospital; Lionel Moore Billingham, Cardiff; Kevin Robert Chapple, St. Bartholomew's Hospital; Benjamin Young Harper Christmas, Middlesex Hospital; Cyril Bernard Dix, Guy's Hospital; Theodore Henry Dobrashian, University College; John Edwin Hardie Duckworth, Guy's Hospital; William Collins Faull, St. Mary's Hospital; Edgar Francis Job Jones, Cardiff; Francis William Kemp, Charing Cross and King's College; Elizabeth O'Flynn, London School of Medicine for Women; Arthur Gordon Ord, Guy's Hospital; Mohammed Abbas Ragy, King's College; Joseph Hajee Sullaiman, Guy's Hospital; and Henry William Miles Williams, Cardiff.

Chemistry.—Frederick Thomas Allen, St. Thomas's Hospital; William Edward Barnes, University College; Alfred Foster, St. Bartholomew's Hospital; Wahba Girgis, St. Mary's Hospital; Denis Paul Guilfoyle, St. Bartholomew's Hospital; Tudor David Llewelyn, Cardiff; Eva Morton, London School of Medicine for Women; and George Foster Smith, Manchester University.

Physics.—Ina Valentine Vincent, London School of Medicine for Women and Polytechnic Institute.

Biology.—Abraham Abelson, D.Sc. Lond., D. ès L., University College; Frank Barker, King's College; William Edward Barnes, University College; Willie Beaumont, London Hospital; Lionel Moore Billingham, Cardiff; Frederica Mary Bradley and Anna Bridget Broman, London School of Medicine for Women; John Francis Edward Burns, Bristol University; Norman Edward Davies Cartledge, St. Bartholomew's Hospital; Marjorie Carnsew Chappel, London School of Medicine for Women; Kevin Robert Chapple, St. Bartholomew's Hospital; Benjamin Young Harper Christmas, Middlesex Hospital; Percival Charles Collyns, St. Bartholomew's Hospital; Ivor Joseph Corbett and Ignatius Joseph Cruchley, London Hospital; Theodore Henry Dobrashian, University College; Arthur Duffy and Frank Edward Edwards, Manchester University; Gwilym Pennant Evans and William Collins Faull, St. Mary's Hospital; Schalem Finkelstein, Zürich and King's College; John Eskdale Fishburn, Portsmouth Technical College; Sydney Hazeldine, B.A. Cantab., University College; Arthur Robert Hill, Middlesex Hospital; Thomas James, St. Bartholomew's Hospital; Edgar Francis Job Jones, Cardiff; Francis William Kemp, Charing Cross and King's College; John Kendall and Gerald Baeyertz Kirkland, Guy's Hospital; Paul Lindsey, St. Bartholomew's Hospital; Tudor David Llewelyn, Cardiff; Eva Morton, London School of Medicine for Women; Arthur Richard Neckles and Arthur Gordon Ord, Guy's Hospital; Frederick Ferdinand Petersen, London Hospital; Eleanor Margaret Reece, London School of Medicine for Women; Charles Edward Roach-Smith and Geoffrey Bathe Withers, London Hospital; Peter Erbin Williams, B.Sc. Wales, Cardiff; and Sidney Wolff, Guy's Hospital.

At the Second Professional Examination of the Conjoint Board, held on March 25th, 26th, and 29th, 53 candidates presented themselves, of whom 29 were approved and 24 were rejected. The following are the names of the successful candidates:—

Hector Demetrius Apergis and Ernest Horace Bryant, Guy's Hospital; Charles Herbert Carroll and *Joseph Clinton Collins, London Hospital; Eric Croft, New Zealand and London Hospital; Mangalanathan Dominick, Madras University; Nassry Gobran El-Gawly, St. Bartholomew's Hospital; Mikhail Elias, St. Mary's Hospital; Frank James Harrington and George Raymond Hubbard, Guy's Hospital; John Powell Jones Jenkins, University College, Cardiff; Florence Maltby Kerruish, Liverpool University; Richard Turner McRae, London Hospital; Walter Harry Maudling, King's College; Elizabeth O'Flynn, Edinburgh and London School of Medicine for Women; May Olivera, L M S. Bombay, Bombay University; Ahmed Othman, King's College; Aron Pastel, Paris and King's College; Edward Rowley Peirce, Birmingham University; William Irving FitzGerald Powell, London Hospital; Ronal Eric Rampling, St. Thomas's Hospital; Florence Mildred Rhodes, London School of Medicine for Women; Khurshedjee Jamsedjee Rustomjee, Liverpool University; George Ernest Spero and Howard Branston Troup, London

Hospital; Robert Hugh Turner, Bristol University; Hugh Pennefather Warren, London Hospital; Francis Eaton Gordon Watson, St. Bartholomew's Hospital; and Henry George Watters, London Hospital.

* This candidate having obtained the highest number of marks in Anatomy will be recommended to the Council of the Royal College of Surgeons for the Begley studentship.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the Preliminary Science Examination for the Licence in Dental Surgery, held on March 23rd, 25th, and 26th, the following candidates were approved in the undermentioned subjects:—

Chemistry and Physics.—Harold John Allen, Middlesex Hospital; Malcolm Beverley Burton, Norwich Technical Institute; Cyril Dudley Melville Dorward, Guy's Hospital; Kenneth Wilfred Eady, Brighton Municipal Technical College; Augustus Ford, West Ham Municipal Technical Institute; Ivan Jephson Gardiner and Dudley Keverne Gaskill, Guy's Hospital; Frank Hiam, Royal Dental Hospital; Charles Harold Sterne Horwitz, Guy's Hospital; Francis Joslin Janch, Royal Dental Hospital; Ernest Wilfrid Jarvis, Guy's Hospital; Charles George Lingford, Royal Dental Hospital; Isidore David Marks, Birmingham University; Kenneth Marshall, Walsall Municipal Institute; Edgar Evan Holt Phillips, Birkbeck College; Ernest Henry Richards, Guy's Hospital; and Norman Victor Wadsworth, Birkbeck College.

Chemistry.—Clifford Baker, Birmingham Municipal Technical School; Ronald Francis Binns, Polytechnic Institute; Frederick George Pritchard Flanders and Stanley Godsill, Guy's Hospital; Norman Leigh Simpson, Cardiff; and Sydney Stamp, Royal Albert Memorial College, Exeter.

Physics.—Iorwerth Dulyn Davies, Birmingham University; Leslie Frank Fouraker, Guy's Hospital; Florence Goodman, Polytechnic Institute; John James, University College, Southampton; and Herbert Newton Tiplady, Leeds Technical School.

UNIVERSITY OF LONDON.—At the Second Examination for medical degrees, for internal and external students, held recently, the following candidates were successful:—

Part I., Organic and Applied Chemistry.—Lena Cecilia Adam, London (Royal Free Hospital) School of Medicine for Women; Norman Dyer Ball, University College; Loveday Shackell Banes and Annie Hardy Banks, London (Royal Free Hospital) School of Medicine for Women; Monty Baranov and Henry Eric Beasley, University College; Levy Bernstein and Anthony Blackstock, King's College; John Douglas Magor Cardell, St. Thomas's Hospital; Wilfred Bayley Christopherson, St. Bartholomew's Hospital; Charles Eric Cobb, St. Thomas's Hospital; Humphrey Noel Felix Cook, University College; Anthony Beach Cowley, St. Bartholomew's Hospital; Joyce Emily Craggs and Nora Annie Crow, London (Royal Free Hospital) School of Medicine for Women; Evan Sherrah Davies, King's College; Idris Davies, University College, Cardiff; Mary Day, London (Royal Free Hospital) School of Medicine for Women; Francis Percival de Caux, St. Bartholomew's Hospital; Elizabeth Denniston, London (Royal Free Hospital) School of Medicine for Women; George Wilhelm Robert W. Dreiheller, St. Bartholomew's Hospital; Abraham Eidinow, London Hospital; Sylvia Victoria Elman, London (Royal Free Hospital) School of Medicine for Women; Frederick Augustus Evans, London Hospital; Donald Charles Fairbairn, St. Bartholomew's Hospital; Lilian Mabel Fisher, London (Royal Free Hospital) School of Medicine for Women; Gerald William Thomas Hunter Fleming, University of Durham; Abraham Foner, London Hospital; Wilfrid Frederick Francis, St. Mary's Hospital; Alfred Laurence Goff and Jacob Gorsky, King's College; *Walter Henry Grace, Guy's Hospital; Gwenvron Mary Griffiths, London (Royal Free Hospital) School of Medicine for Women; *Albert William Holgate, University College; Henry Nevill Hornibrook, St. Bartholomew's Hospital; John Francis Howells, University College; Marshall Jackson, St. Bartholomew's Hospital; Santo Weisberg Jeger, University College, Cardiff; Robert David Jones, University of Liverpool; Noel Edward Ffarnwell Kemm, University of Bristol; Vasant Ramji Khanolkar, University College; *Muriel Elsie Landau and Mary Kathleen Forsaith Lander, London (Royal Free Hospital) School of Medicine for Women; Charles Gordon Lewis, University of Birmingham; Simon Sally Liebermann and Ernest Kenneth Macdonald, St. Thomas's Hospital; *Janet McAllister McGill, London (Royal Free Hospital) School of Medicine for Women; Gerald Joseph Wyld McMichael, University of Birmingham; Vida Sara Maxwell, London (Royal Free Hospital) School of Medicine for Women; David Chaim Mintzman and Ludlow Murcott Moody, King's College; Edith Mary Ponsonby Morris, London (Royal Free Hospital) School of Medicine for Women; Edith Marjorie Newman, University College, Cardiff; John Ernest Nicole, King's College; Norah Dorothy O'Flyn, University College, Cardiff; Marguerite Henrietta Pam, London (Royal Free Hospital) School of Medicine for Women; Manek Jamshedji Panthaky, King's College; Rowland John Perkins, St. Bartholomew's Hospital; George Stuart Bain Philip, King's College and Charing Cross Hospital; Ruth Wade Plimsoll, London (Royal Free Hospital) School of Medicine for Women; Leonard Duncan Porteous, St. Bartholomew's Hospital; John Northley Julian Powlesland, Middlesex Hospital; Dorothy Priestley Priestley, Girton College and University of Leeds; Mary Millicent Prior, London (Royal Free Hospital) School of Medicine for Women; Ernest Frank Rabey, Middlesex Hospital; Ronald Seton Ralph, Guy's Hospital; Edward Douglas Thomas Roberts, St. Thomas's Hospital; Edward Snow Rose, St. Bartholomew's Hospital; Hugh Thornton Rymer, King's College; Solomon Nahum Senitzky, London Hospital; Bryan Buckley Sharp, St. Bartholomew's Hospital; Joseph Harold Sheldon, King's College; Arthur George Shurlock, Jesus College, Cambridge; William Henry Simmons, Guy's Hospital Bertram Leslie Slater, London Hospital; George John Sophianopoulos and Gilbert Patrick Staunton, St. Bartholomew's Hospital; Mary Sylvia Stocks, London (Royal Free Hospital) School of Medicine for Women; Harold Edward Suter, St. Mary's Hospital; Khiam Soon Tan, University College; Stanley Roy Tattersall, St. Thomas's Hospital; John Alan Tennyson-Smith, Dulwich College; Cyril James Thomas, St. Thomas's Hospital; Howard Metherell Toop, London Hospital; Robert Lawrence Walker, St. Mary's Hospital; Austin Darley Wall, St. Bartholomew's Hospital; Hygeia Leigh Josephine Wallace, London (Royal Free Hospital) School of Medicine for Women; Arthur Elston Ward, St. Thomas's Hospital; Robert Walter Warrick, Guy's Hospital and Finsbury Technical College; and Eugene Wolff, University College.

* Awarded a mark of distinction.

Part II.—Gustave Adler, London Hospital; George Eric Archer, Victoria University of Manchester; Eric Miles Atkinson, St. Bartholomew's Hospital; Roy Douglas Aylward, London Hospital; Kenneth Norman Grierson Bailey, St. Bartholomew's Hospital; James Reid Banks, University College; Claude Wells Woolloton Baxter and Eric Biddle, Guy's Hospital; Harold John Blampied, St. Thomas's Hospital; Israel Braun, St. Bartholomew's Hospital; Duncan Gillard Churcher and †Wilfrid Edward Le Gros Clark, St. Thomas's Hospital; Apollo John Cokkinis and Joseph Monlas Courtney, St. Mary's Hospital; Thomas Morley Cunnington, University College; George Vincent Davies, St. Mary's Hospital; Simon Cyril de Silva Wijeyeratne, University College; Howard Lexster Douglas, London Hospital; Monte Edwards, St. Thomas's Hospital; Grace Hamilton Ewart, London (Royal Free Hospital) School of Medicine for Women; William Feldman, University College; Douglas Hugh Aird Galbraith, Guy's Hospital; Maximilian Walter Geffen, University College; †Dorothy Gilford, London (Royal Free Hospital) School of Medicine for Women; Ernest Howard Glenny, St. Bartholomew's Hospital; ‡Henry Gluckman, London Hospital; Eryl Glynne, London (Royal Free Hospital) School of Medicine for Women; Alexander Fitzgerald Grattan Guinness, Guy's Hospital; Hubert Oliver Gunewardene, King's College; Joan Hardy, London (Royal Free Hospital) School of Medicine for Women; Thomas Lothian Heath, Guy's Hospital; Kenneth Reed Hill, University College; Bertha Hinde, London (Royal Free Hospital) School of Medicine for Women; Eric Clark Hinde and Valentine Robert Hirsch, Guy's Hospital; Theodora Johnston, London (Royal Free Hospital) School of Medicine for Women; John Isaïe Kühne, King's College and Charing Cross Hospital; Felix Raoul Leblanc, Guy's Hospital; Emily Catherine Lewis and Ethel Marion McCartney, London (Royal Free Hospital) School of Medicine for Women; Bruce Maclean, Puthiyaveettil Narayana Menon, and Martin Herbert, Oldershaw, University College; Alexander Edward Patrick Parker, King's College and Westminster Hospital; Irene Grace Parsons, London (Royal Free Hospital) School of Medicine for Women; Arthur Edmund Beer Paul, University College; Edwin Seymour Phillips, Guy's Hospital; Frank Portas, King's College and Westminster Hospital; Sybil Madeline Georgina Pratt, London (Royal Free Hospital) School of Medicine for Women; Henry Norman Pritchett, Guy's Hospital; Hywel Tegid Prys-Jones, University College, Cardiff; Mariamme Olive Ramsay, B.Sc., Joyce Baron Reed, Frances Elinor Rendel, Olive Rendel, and Gwendolen Mary Rolfe, London (Royal Free Hospital) School of Medicine for Women; James Paterson Ross, St. Bartholomew's Hospital; Henry Bret Russell, St. Thomas's Hospital; Eleanor May Scarborough, London (Royal Free Hospital) School of Medicine for Women; Simeon Cyril Shaw, Middlesex Hospital; Raghunath Dadoba Shirvalkar, University College; Arthur Anton Thiel, St. Bartholomew's Hospital; Benjamin Thomas, St. Mary's Hospital; Daniel Jenkin Thomas, B.Sc., and John Herbert Thomas, University College; George Edwin Tilsley, University of Bristol; Charles Maitland Titterton, St. Bartholomew's Hospital; Sydney Arthur Thomas Ware, St. Thomas's Hospital; Frederick William Arbuthnot Watt, London Hospital; Ralph Edwin Stuart Webb, Middlesex Hospital; Arthur William Wells, London Hospital; and John Prichard Williams, University College, Cardiff.

† Distinguished in Anatomy. ‡ Distinguished in Pharmacology.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

VICTORIA UNIVERSITY OF MANCHESTER.—At examinations held in March the following candidates were successful:—

FIRST M.B. AND CH.B. EXAMINATION.

Part I., Inorganic Chemistry and Physics.—Mary E. Boullen, G. H Buckley, T. H. S. Bullough, T. E. Coope, George Cumming, E. B. A. Edelston, F. C. Jones, Simon Kelly, James Leather, W. E. Mason, P. B. Mumford, E. R. Ormerod, Efimé Ratner, J. S. Robinson, Harry Stafford, Doris M. R. Tompkin, and Ruth A. Wilson.

Part II., Biology.—Nooman Abdoh, May Ashburner, Mary E. Boullen, G. H. Buckley, T. H. S. Bullough, T. E. Coope, George Cumming, Kathleen Doyle, Georgiana M. Duthie, E. B. A. Edelston, Olive M. Gimson, F. G. Hamnett, Archibald Harris, F. C. Jones, Simon Kelly, James Leather, J. A. Marriott, W. E. Mason, P. B. Mumford, J G. Nolan, E. R. Ormerod, William Reikan, J. S. Robinson, A. H. Sadek, Harry Stafford, Doris M. R. Tompkin, and Ruth A. Wilson.

Chemistry.--Elizabeth C. Davies and J. G. Nolan.

FIRST EXAMINATION FOR BACHELORSHIP IN DENTAL SURGERY.

Physics and Zoology.—E. L. Morgan.

DIPLOMA IN DENTISTRY (FIRST EXAMINATION).

C. C. Breakell, S. K. Gibson, J. C. Knowles, E. B. Manley, and Harold Walmsley.

Chemistry.—Bertram Wilkinson.

Physics.—D. M. Barnes, Norman Flitcroft, A. N. Place, and Matthew Raeside.

University of Glasgow.—The following candidates have passed the examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated—B., botany; Z., zoology; P., physics; C., chemistry:—

John Smith Aitken (Z.), Robert Caldwell Allan (Z.), Carl Otto Anderson, M.A. (B., P.), John Lang Anderson, M.A. (Z.), James Baird (Z., C.), Adam Barr (C.), Alexander Kidd Begg (Z , C.), Alexander Shanks Bisset (P.), Alexander Ronald Black (Z . C.), John William Stewart Blacklock (Z., C.), Donald Cameron Bowie (C.), Alexander Davie Boyd (Z.), Alexander Lothian Brough (Z., C.), Archibald Donald Brown (Z.), Murdoch Brown (Z., C.), James Caddies (Z., C.), Alister Campbell (Z., C.), Donald Stewart Campbell (B., Z.), James Gibson Campbell (Z., C.), Lovat Fraser Capell (Z., C.), John Parker Chisholm (P.), Booth Frederick Clarke (B., P.), Horace Collingbourne (B.), John Gilchrist Coltart (Z., C.), Alexander Conner Connell (Z., C.), George Michael Cooper (Z., C.), James Livingstone Cowan (Z., C.), Archibald Joseph Cronin (Z., C.), Edward Mitchell Erskine Cumming (B., P.), Douglas Roy Ferguson Davidson (Z.), John Campbell Dow (P.), John Grahame Drew (Z., C.), Peter Alexander Faichney (Z., C.), Robert Fletcher, M.A. (Z., C.), Colin Macphail Forbes (Z., C.), Robert Adam Forsyth (Z., C.), Allan Donald Fraser (C.), William Armour Galbraith (Z., C.), Matthew Forsyth Gibson (Z., C.), William Gibson (Z.. C.), Francis Denis Gillespie (Z., C.), Joseph Drysdale Glaister (Z., C.), Adam Smith Goudie, M.A. (P.), John Crawford Grant (Z., C.), John Forrest Hamilton (Z., C.), William Mason Hamilton (Z., C.), William Harrison (Z., C.), John Hewitt (Z., C.), Robert Gold Howat (Z.. C.), David Imrie (Z., C), John Edward Jeffrey (Z., C.), Andrew Yuill Pollok Johnston (Z., C.), Ian Gordon Kennedy (Z., C.), Robert Kennedy (Z., C.), William Milroy Kennedy (Z., C.), John Kirk, M.A., B.Sc. (Z., C.), Alexander Adam Kirkland (Z.), William Malcolm Knox (Z.), James Burnett Lawson (Z.), John Leishman, M.A. (Z., C.), Barnett Levine (Z , C.), Douglas Marshall Lindsay (Z)., David Logan (Z.,C.), George Alexander Lowe (Z., C.), Duncan MacColl (B., P.), Robert M'Courtney (Z.), Patrick Joseph M'Cusker (Z., P.), Andrew Buchanan Macdonald (C.), John MacColl MacDougall (Z., C.), Frederick M'Elwee (Z., C.), William Douglas Macfarlane (Z., C.), Robert M'Intosh M'Kean (B., Z., P.), William M'Kendrick (Z.), Kenneth Mackenzie (Z., C.), Alexander Henderson M'Lean (Z.), Angus Maclean (P.), Neil Alexander MacLean (Z., C.), William Henry M'Leish (Z., P.), Joseph Patrick M'Millan (Z., C.), Peter MacMurray (Z., C.), Alexander M'Callum Macqueen (Z., C.), Robert Mair (Z., C.), James Matheson (B.), John MacKean Maxton (Z., C.), Hugh Robertson Melville (B., P.), Modiri Silas Molema (Z , C.), James Bennie Morrison (C.), George Nelson (Z.), John Nicolson, M.A. (C.), John Stewart Nisbet (Z., C.), John Alexander Ramsay Oswald (Z., C.), Gilbert Paterson (Z., C.), James Paterson (Z.), William John Payne (Z., C.), John Pollock (Z., C.), Thomas Poole (C.), Rahmat Ullah Qureshi (Z., P.), Peter Crawford Rankin (Z., C.), David Reid (Z., C.), Andrew Morton Robertson (Z., C.). Henry Alexander Ross (Z., C.), Archibald Morton Sanders (Z., C.), John Kennedy Scotland (Z.), Thomas Sommerville (Z., C.), Donald M'Dougall Sproull (Z., C.), Horatio Walter James Steen (B., Z., C.), John Stevenson (B., P.), Robert Miller Stevenson (B., Z.), William Howie Stevenson (Z., C.), Andrew Sneddon Bennie Stewart (Z., C.), Noel Eustace Stone (Z., C.), Alexander Strang (Z., C.), Hugh Sutherland (Z., C.), William Crookenden Taylor (B.), William Robert Paton Templeton (Z.), Ernest John Tytler Thompson (Z.), John Todd (B., Z., C.), John Leonard Turpie (Z., C), John Walker Walker (Z., C.), William Burns Wallace (Z.), James Alexander Walls (B , Z.), Richard Jackson Watson (Z., C.), John Cunningham Watt (Z.,,) Robert Kennedy Watt (Z., C.), John Whitelaw, M.A. (Z. C.), Andrew Wilson (Z., C.), Robert MacLaren Wilson (B., P.), and Stephen Young (B., Z., P., C.)

Women.—Christine Calder Abernethy (Z., C.), Helen Frances Allinson (B., Z., C.), Ellen Davidson Anderson (Z., C.), Grace Hay-Anderson (Z , C.), Elizabeth Pace Cameron (Z., C·), Helen Clacher Cameron (Z., C.), Edith Chalmers (Z.), Mary Turner Liddell Clark (Z., C.), Emily Loudon Clow (Z., C.), Veronica Catherine Jessie Davies (Z., C.), Charlotte Ann Douglas (Z.), Helen Hogg (Z.), Marion Pitcairn Hogg (Z., C.), Elizabeth Smith Inglis (Z., C.), Margaret Logan (Z , C.), Alice M'Elwee (Z., C.), Alice M'Glashan (Z., C.), Evelyn Christina M'Donald M'Gregor (Z , C.), Ellen Thomson Mackenzie (Z., C.), Annie Isabel Christian Maclardy (Z.), Margaret Elizabeth M'Laren (Z., C.), Mabel Mary Maclean (Z., C.), Caroline Jane Maclennan (Z.), Muriel Mary M'Walter (Z.), Agnes Hislop Macwhirter (Z,), Florence Frances Mitchell Milne (P.), Georgina Murdoch (Z , C.), Kathleen Nicol (B.), Margaret Mitchell Paterson (Z.), Louisa Evelyn Pigeon (Z., C.), Margaret Innes Prangnell (P.), Eliza Dorothea Sandison (Z., C.). Elaine Bessie Stuart Stocquart (Z., C.), Muriel Amy Stowe (Z.), Jean Banks Thomson (Z.), Marion Thomson (B., Z., P., C.), Lilian Jane Taylor White (Z., C.), and Helen Barr Wilson (Z., C.).

The following have passed the examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated—A., anatomy; P., physiology; M., materia medica and therapeutics:—

John Alston (M.), Alexander Basil Austin (P.), Alexander George Brand (M.), William Moore Cameron, M.A. (A., P.), John Williamson Dalglish (M.), James Ferguson Duthie (M.), Kenneth Henry Dyke (A., P.), James Ewing (M.), Thomas Fleming (A.), Thomas Ronald Fulton (M.), Kenneth John Alexander Gillanders (A.), John Gray Gilmour (A.), William Hadden Gordon, M.A. (M.), Eduardo Guillermo Sanchez Hall (A., P.), Frederick William Hebblethwaite (A., P.), George Mundell Hetherington (M.), Arthur Robert Hill (M.), Tom John Honeyman (P., M.). James Neil Jamieson, M.A. (A., P.). Oswald Johnston (A., P.), Peter Stewart Kinloch (M.), William Fulton Kivlichan, M.A. (A.), Andrew Brown M'Aulay Lang, M.A. (A., P., M.), George Lean, B.Sc. (A., P.), James Liddell (A., P.), Frederick Richard Lubovius (A., P.), William Wilson Lundie (A., P.), Arthur Daniel Clark M'Gowan (P., M.), Alexander M'Cheyne Macintosh (A., P.), John Ebenezer MacIntyre (A., P.), Donald William Morison MacKenzie (A., P.). Neil Mackillop (M.), Robert Hugh M'Killop (A.), Donald Macqueen (A., P.), William M'William (A., P.), William Duff Miller (A., P.), George Anderson Mitchell (A., P.), James Moffat (P.), William Harold Palmer (M.), James Walker Patterson (A., P.), Samuel Murdoch Riddick (A., P.), Ian Menteith Robertson (A., P.), John Llewelyn Rowlands (P.), Alexander Benham Stich, B.Sc. (A., P.), Thomas Stewart Stirling (A., P.), James Joseph Treanor (A., P.), James Livingstone Walker (A.), Robert Nisbet Walker, M.A. (M.), John Allan White (A.), Kenneth John Talbot Wilson (M.), William Alexander Wilson (M.), and Robert Young (M.).

Women.—Janetta Margaret Alexander (M.), Annetta Gillies Turnbull Anderson (A., P.), Mabel Nellie Blake (A., P.), Margaret O'Rourke Gallagher (P.), Mary Brown Gillespie (A., P.), Margaret Hutchison Glen (M.), May Constance Boughton Leigh (A.), Margaret Jane Thorburn Leitch (M)., Elizabeth Clark M'Haffie, M.A. (A.), May Elizabeth MacIver (M.). Alice Julia Marshall (M.), Mercedes Margaret Morton (A.), May Isabella Turner Reid (M.), and Marion Watson (M.).

The following have passed the examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated—P., pathology; M., medical jurisprudence and public health:—

William Dick Allan (M.), John Alston (P.), William Baird (M.), James Beveridge (P., M.), James Prowse Broom (P.), Duncan Cameron (M.), Joseph Chalmers (M.), Douglas Hamilton Coats (P.), Alexander Findlay Cook (M.), Archibald Shankland Cook (M), James Crerar (P.), John Norman Cruickshank (M.), John Freeland Cunningham, M.A. (P.), John Williamson Dalglish (P.), Andrew Davidson (P., M.), George del Pino (P.), Michael Devers (P.), Alexander Dick (P.), John Dunbar (M.), James Ferguson Duthie (P.), James Ewing (P.), James Brown Fisher (P., M.), Matthew Mair Frew (M.), Leonard Woodburn Gemmell (P., M.), William Hamilton Gibson (P., M.), Norman William Gilchrist (P.), Thomas Gray (P.), David Heard (P.), Arthur Robert Hill (P.), Theodore Paton Hutchison (P.), James Scott Kinross (M.), George Kirkhope (M.), Robert Lindsay, M.A. (M.), Frederick Colquhoun Logan (P.), Donald John MacDougall (P., M.), James Wallace Macfarlane (M.), Gerald James M'Gorty (P.), Joseph Patrick M'Grechin (P., M.), John MacInnes (M.), Neil MacKillop (P.), Keith Stuart Macky (M.), Duncan M'Laren (P., M.), John Wilson Maclean (P.), Frederick Robertson Martin (P.), William Watson Morrison (P.), Alexander Morton (M.), John Hughes Murray (P.), William Harold Palmer (P.), James Alexander Paterson (P.), Thomas Smith Paterson (P.), William James Poole (P.), Thomas Joseph Desmond Quigley (P., M.), Alexander Wilkie Ritchie (M.), David Bell Robertson (M.), Thomas Robertson Sinclair (M.), William Mitchell Stewart (M.), John Lawrence Torley (M.), Robert Nisbet Walker, M.A. (P.), Robert Smellie Weir (P.), Clive Alan Whittingham (P., M.), and Kenneth John Talbot Wilson (P.).

Women.—Janetta Margaret Alexander (P.), Christina Blair Buchanan (M.), Maud Christine Cairney (M.), Ann Kelly Cormack (P.), Jane Beattie Davidson (M.), Jessie Crawford Gilchrist (M.), Florence Scott Kirk (P., M.), Margaret Jane Thorburn Leitch (P.), Elizabeth Stewart Martin (M.), Helen Young Murdoch, M.A. (M.), Mary Ishbel Sinclair (P.), Jane Stalker (M.), and Marion Baillie Darling Wilson (M.).

At the recent professional examinations for the degrees of M.B. and Ch.B. the following candidates passed with distinction in the subjects indicated:—

In (*a*) Zoology and (*b*) Chemistry—John E. Jeffrey. In Zoology—John W. S. Blacklock, Archibald D. Brown, John Hewitt, Robert G. Howat, Andrew S. B. Stewart, Ernest J. T. Thompson, Mary T. L. Clark, Charlotte A. Douglas, Margaret Logan, Evelyn C. M. M'Gregor, Caroline J. Maclennan, Georgina Murdoch, and Muriel A. Stowe. In Physics—Edward M. E. Cumming. In Chemistry—Gilbert Paterson, William J. Payne, and John Pollock. In Physiology—Alexander B. Stitch. In Materia Medica and Therapeutics—Margaret H. Glen. In Pathology—Frederick C. Logan and Clive A. Whittingham. In Medicine—William E. Boyd. In Surgery—Alfred T. Logan. In Midwifery—Hugh B. Lawrie.

University of Aberdeen.—At the graduation ceremony on March 30th the following degrees, among others, were conferred:—

Doctor of Medicine.—Sebastian Valentyn Van Niekerk, Edward Wood Wood-Mason (old regulations), Thomas Charles McCombie Young, and Robert Semple.

Bachelor of Medicine and Bachelor of Surgery.—William Anderson, Elizabeth Grace Berneaud, Douglas Wales Berry, Ronald John Bruce, Patrick Thomas Catto, Austin Basil Clarke, Reginald Tom Cox, Douglas Cran, Alfred George Brown Duncan (second-class honours), George William Elder, Alexander Farquhar, Robert Forgan, John Alexander Innes, John William Innes, William Hunter Kay, William Leslie, Herbert John Adam Longmore, John Moir MacKenzie, John Moir, Robert Munro, Robert Boulton Myles, Eric Newton, Cameron Macdonald Nicol, Forster Heddle Brown Norrie, Gilbert Wolridge Rose, Colin George Shearer, and William Joseph Webster.

Diploma in Public Health.—John McGregor Hartley Reid and Benjamin Theodore Saunders.

The Chelsea Hospital for Women has received from the trustees of the Zunz bequest £500 for the maintenance of the Annie Zunz Ward.

A Centenarian.—Mr. William Perkins, of Shepau Stow, Lincolnshire, has just celebrated his 103rd birthday.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Bennett, F. D., M.R.C.S., has been appointed Temporary Honorary Assistant Surgeon to the Royal Eye Hospital, Southwark.

Foulerton, A. G. R., F.R.C.S. Eng., D.P.H. Camb., has been appointed Lecturer in Public Health at the London School of Medicine for Women.

Fraser, Robert, M.B., Ch.B. Edin., has been appointed Medical Officer of Health for Chesterfield.

Gamgee, Leonard P., F.R.C.S Eng., has been appointed Honorary Surgeon to the Birmingham General Hospital.

Hunter, J. W. M., L.R.C.P. & S. Edin., L F P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Ruddington District of the county of Nottingham.

Letchworth, T. W., M.B., B.Ch. Cantab., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Temporary Honorary Assistant Surgeon to the Royal Eye Hospital, Southwark.

Loosely, A. E. A., M.B., B.Ch. Oxon., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Temporary Honorary Assistant Surgeon to the Royal Eye Hospital, Southwark.

Mills, G. P., M.B., B.S. Lond., has been appointed Assistant Surgeon to the Birmingham General Hospital.

Moss, F. W., M.B., C.M. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Carnforth District of the county of Lancaster.

Murray, J. J., M.B., B.Ch. Belf., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Downpatrick District of the county of Down.

Niven, A. S., M.D. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Turriff District of the county of Aberdeen.

Sampson, H. H., M B., Ch.B. Birm., has been appointed Assistant Surgeon to the Birmingham General Hospital.

Sharpe, F. A., M.B , B S., D.P.H. Leeds, has been appointed Medical Officer of Health for Barnsley.

Vermylen, Joseph (Louvain), has been appointed House Surgeon to the North Devon Infirmary, Barnstaple.

Wharton, John, M.D. Cantab., has been appointed one of the Medical Referees under the Workmen's Compensation Act for County Court Circuit No. 8 and for the Salford County Court Circuit No. 7 for Ophthalmic cases.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (*see Index*).

Barrow-in-Furness, North Lonsdale Hospital.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

Bath, Royal United Hospital.—Resident Medical Officer.

Benenden, Kent, National Sanatorium.—Locum Tenens Medical Superintendent. Salary 5 guineas weekly, with board and laundry. Also Assistant Medical Officer. Salary £120 per annum, with board and laundry.

Birkenhead Borough Hospital.—Senior House Surgeon. Salary £120 per annum, with board and laundry. Also Junior House Surgeon. Salary £100 per annum, with board and laundry.

Birmingham and Midland Ear and Throat Hospital, Edmund-street.—House Surgeon for six months Salary at rate of £100 per annum, with board, lodging, and washing.

Birmingham General Dispensary.—Resident Medical Officer, unmarried. Salary £250 per annum, with apartments, attendance, &c.

Birmingham, Yardley Road Sanatorium and the Anti-Tuberculosis Centre.—Third Assistant Medical Officer. Salary £200 per annum, with board and residence.

Blackburn Union Workhouse.—Resident Medical Officer, unmarried. Salary £350 per annum, with apartments, rations, washing, and attendance.

Bootle Borough Hospital.—Senior and Junior House Surgeons. Salary £150 and £130 per annum respectively, with residence, board, and laundry.

Bradford Children's Hospital.—House Surgeon. Salary £120 per annum, with board, residence, and laundry.

Bridgwater Hospital.—House Surgeon, unmarried. Salary at rate of £125 per annum, with board, lodging, and washing.

Bristol General Hospital.—Second House Physician, House Surgeon, and Casualty House Surgeon, also Resident Obstetric Officer, for six months. Salary at rate of £150 per annum, with board, residence, &c.

Bristol Royal Infirmary.—Three House Surgeons, Two House Physicians, and One Obstetric and Ophthalmic House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.

Bristol University.—Demonstrator in Anatomy. Salary £180 per annum.

Bury Infirmary.—Senior House Surgeon and Junior House Surgeon. Salary £175 and £150 per annum respectively, with board, residence, and washing.

Buxton, Derbyshire, Devonshire Hospital.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

Camberwell, Parish of.—Temporary Assistant Medical Officer for Infirmary, Brunswick-square, Camberwell, Gordon-road Institution, Peckham, and Scattered Homes. Salary at rate of £500 per annum, with apartments, board, and washing.

Canterbury, Chartham Asylum.—Locum Tenens Assistant Medical Officer. Salary £7 7*s.* per week, with board, lodging, and washing.

Canterbury Mental Hospital.—Assistant Medical Officer unmarried. Salary £250 per annum, with board, lodging, washing, and attendance.

Carlisle, Cumberland and Westmorland Asylum, Garlands.—Junior Assistant Medical Officer, unmarried. Salary £250 per annum, with board, lodging, and washing.

Carlisle Non-Provident Dispensary.—Resident Medical Officer. Salary £200 per annum, with apartments (not board).

Carmarthen, Joint Counties Asylum.—Temporary Second Assistant Medical Officer. Salary at rate of £200 per annum, with board, lodging, washing, &c.

Carshalton, Surrey, Queen Mary's Hospital for Children.—Assistant Medical Officers. Salary at rate of 6 guineas per week, with board, lodging, and washing.

Chesterfield and North Derbyshire Hospital.—Senior House Surgeon and Second House Surgeon. Salary £200 and £150 per annum respectively, with board, apartments, and laundry.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—Tuberculosis Officer. Salary at rate of £400 per annum, with lunch and dinner. Also Gentleman to supply the place of Members of the Out-patient Staff of Physicians who are on service in H.M. Forces. Also House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing.

Derby, Derbyshire Hospital for Sick Children.—Female Resident Medical Officer for six months. Salary £200 per annum.

Dorset County Council.—Temporary Assistant Medical Officer of Health. Salary at rate of £300 per annum.

Dudley, Guest Hospital.—Senior Resident Medical Officer. Salary £150 per annum, with board, residence, attendance, and washing.

Edinburgh, Royal Edinburgh Asylum, Morningside.—Assistant Medical Officer. Salary £175 per annum, with board, rooms, &c.

Flintshire Education Committee.—Temporary Assistant Medical Officer for six months. Salary 5 guineas per week.

Halifax Royal Infirmary.—Second and Third House Surgeons, unmarried. Salary £120 and £100 per annum respectively, with residence, board, and washing.

Hammersmith Infirmary and Workhouse, Ducane-road, Wormwood Scrubs, W.—First Assistant Medical Officer. Salary £220 per annum, with board, lodging, washing, and attendance.

Hull, Victoria Children's Hospital, Park-street.—Resident House Surgeon and Resident Assistant House Surgeon. Salary £60 and £50 per annum respectively, with board and laundry. Also Resident House Surgeon. Salary £100 per annum, with board and laundry.

Lancashire County Council, Elswick Sanatorium, near Kirkham.—Medical Superintendent. Salary £300 per annum, with board, apartments, and washing.

Lancaster Royal Infirmary.—House Surgeon or Locum.

Leeds General Infirmary.—Ophthalmic House Surgeon for six months. Salary £50 per annum, with board, residence, and laundry. Also Resident Medical Officer for six months at Ida and Robert Arthington Hospitals. Salary £60 per annum, with board, residence, and laundry.

Liverpool, David Lewis Northern Hospital.—House Physician and House Surgeon for six months. Salary at rate of £100 per annum each, with board, residence, and laundry.

Manchester Children's Hospital, Gartside-street.—Assistant Medical Officer for Out-patient Department for six months. Salary £100 per annum.

Manchester Children's Hospital, Pendlebury.—Resident Medical Officer, unmarried, for six months. Salary at rate of £100 per annum.

Manchester, County Asylum, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

Manchester Education Committee.—Female Assistant School Medical Officer, unmarried. Salary £300 per annum.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Middlesbrough, North Ormesby Hospital.—House Surgeon. Salary £150 per annum, with board, washing, and attendance.

Middlesex Hospital, W.—Two House Physicians. Board and residence provided.

Miller General Hospital for South-East London, Greenwich-road, S.E.—Senior House Surgeon for six months. Salary £100 per annum, with board, residence, and laundry.

New Hospital for Women, Euston-road, N.W.—Female House Surgeon and House Physician. Also Resident Medical Officer at House of Recovery, New Barnet. Salary with this post £60 per annum.

Newport Mental Hospital, Caerleon, Mon.—Temporary Assistant Medical Officer. Salary 5 guineas per week, with board, rooms, and attendance.

Norfolk Education Committee.—Temporary Assistant Medical Officer. Salary £300 per annum.

Northampton General Hospital.—House Surgeon. Salary £120 per annum, with apartments, board, washing, attendance, &c.

Northern Hospital, Winchmore Hill, N.—Locum Tenens Assistant Medical Officer. Salary £7 7*s.* per week, with allowance of £1 10*s.* per week in lieu of residential emoluments.

Notts Education Committee.—Female Assistant School Medical Officer. Salary £300 per annum.

Paddington Green Children's Hospital.—Female House Physician for six months. Salary at rate of £80 per annum, with board, residence, and washing.

Portpatrick, Parish of.—Medical Officer and Public Vaccinator. Salary £60 per annum, and vaccination fees.

Queen Charlotte's Lying-in Hospital, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

Reading, Royal Berkshire Hospital.—Second House Surgeon for six months. Salary £150 per annum, with apartments, board, and washing.

Royal College of Surgeons of England.—Examiners.

Royal Free Hospital, Gray's Inn-road, W.C.—Senior Resident Medical Officer. Salary £200 per annum, with board, residence, and washing. Also Assistant Anæsthetist (part-time). Salary £50. Also Female Junior Obstetric Assistant. Board, lodging, and washing provided.

Royal Institute of Public Health, 37, Russell-square, W.C.—Demonstrator in Bacteriology.

Royal Waterloo Hospital for Children and Women, S.E.—Senior and Junior Resident Medical Officers. Salary at rate of £150 and £100 per annum respectively, with board and washing.

St. Mary's Hospital for Women and Children, Plaistow, E.—Junior Resident Medical Officer for three months. Salary at rate of £90 per annum, with board, residence, and laundry.

Salisbury General Infirmary.—House Surgeon and Assistant House Surgeon, unmarried. Salary £100 and £75 per annum, respectively, with apartments, board, lodging, and washing.

Salford Royal Hospital.—Junior House Surgeon and Casualty House Surgeon for six months. Salary at rate of £100 per annum each, with board and residence.

Salvation Army Mother's Hospital, Clapton, N.E.—Female Resident Medical Officer.

Sheffield, Ecclesall Bierlow Union.—Resident Assistant Medical Officer. Salary £250 per annum, with board, washing, and apartments.

Sheffield Royal Hospital.—Assistant House Surgeon and Assistant House Physician.

Sheffield Royal Infirmary.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.

Shrewsbury, Royal Salop Infirmary.—House Physician. Salary at rate of £110 per annum, with board and apartments.

South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Senior House Surgeon. Salary £150 per annum, with residence, board, and washing.

Stafford County Mental Hospital.—Female Temporary Assistant Medical Officer. Salary £250 per annum, with board, apartments, and laundry.

Stoke-on-Trent County Borough.—Female Medical Officer. Salary £300 per annum.

Stoke-on-Trent, North Staffordshire Infirmary, Hartshill.—House Physician and House Surgeon, unmarried. Salary at rate of £150 per annum, with board, residence, and washing.

Swindon Borough Education Department.—School Medical Officer. Salary £300 per annum.

Taunton and Somerset Hospital, Taunton.—Senior House Surgeon. Salary £120 per annum, with board, lodging, and laundry.

Ventnor, Isle of Wight, Royal National Hospital for Consumption and Diseases of the Chest on the Separate Principle.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with board, lodging, &c.

Wakefield, Clayton Hospital.—Female Junior House Surgeon. Salary £120 per annum, all found.

Wandsworth Union Infirmary, St. John's-hill, Clapham Junction, S.W.—Assistant Medical Officer, unmarried, for six months. Salary at rate of £5 5s. weekly, with board, lodging, and washing.

Warrington Infirmary and Dispensary.—Junior House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.

West End Hospital for Diseases of the Nervous System, Paralysis, and Epilepsy, 73, Welbeck-street, W.—Clinical Assistants to Out-patients' Physicians.

West Ham and Eastern General Hospital, Stratford, E.—House Physicians. Salary £120 and £100 per annum, with board, residence, and washing.

Whitehaven and West Cumberland Infirmary.—House Surgeon. Salary £150 per annum, with board, lodging, and attendance.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Irlam and at Liverpool, Garston, in the county of Lancaster.

The Home Secretary gives notice of three vacancies for Medical Referees under the Workmen's Compensation Act, 1906, for the Sheriffdom of Ayr. Application should be addressed to the Private Secretary, Scottish Office.

Births, Marriages, and Deaths.

BIRTHS.

Donald.—On March 30th, at Dean-street, Liskeard, Cornwall, the wife of John Donald, M.D., of a son.

Griffith.—On March 30th, at Cavendish-road, St. John's Wood, to Helena (née Fletcher) and Harold Kinder Griffith, F.R.C.S., R.A.M.C.(T.), a son.

MARRIAGES.

Forrester—Aylward.—On April 8th, at St. Mary's, Northiam, Sussex, by the Rector, the Rev. A. Frewen Aylward, father of the bride, Archibald Thomas William Forrester, M.D. Lond., to Margaret Mary Frewen Aylward, daughter of the Rev. A. Frewen and Mrs. Aylward, Northiam Rectory, Sussex.

Jones—Graham.—On April 8th, at St. Mary Abbots, Kensington, London, Hugh Richard Jones, M.D., Abercromby-square, Liverpool, to Margaret, second daughter of the late George Graham, Lockerbie, Dumfriesshire.

DEATHS.

Dalby.—On Good Friday, April 2nd, at 14, Royal-terrace, Weymouth, Augustus William Dalby, L.R.C.S., L.R.C.P. Edin., aged 55, of Argyll House, Frome, Somerset, second son of the late William Bennett Dalby, M.D., R.N., of Torquay. Funeral service at Frome Parish Church on Tuesday at 2.30.

Hannah.—On April 6th, at Rock House, Ashton-in-Makerfield, Lancs., from pneumonia, Nathan Hannah, L.R.C.P. Edin., L.F.P.S. Glasg., Medical Officer of Health, Ashton-in-Makerfield Urban District.

Lentaigne.—On March 30th, at Merrion-square, Dublin, Sir John Lentaigne, F.R.C.S. Irel., aged 59 years.

Lewis Jones.—On April 4th, at Harley-street, W., Henry Lewis Jones, M.D., F.R.C.P., aged 58 years.

Wilson.—On April 1st, at The Laburnums, Standish, near Wigan, Joseph Harwood Wilson, M.D., aged 49 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

VITAL STATISTICS OF NYASALAND.

A report, prepared by Mr. A. M. D. Turnbull, assistant chief secretary, on the Blue-book of the Nyasaland Protectorate for the year 1913–14, states that there has been an increase in the European population, which on March 31st, 1914, was returned at 799. The Asiatic population on the same date was 408, whilst the native population is estimated at 1,065,119. Twenty-six European births and seven deaths were registered during the year, the birth-rate being 32·54 and the death-rate 8·76 per 1000. There were no Asiatic births, although seven had been recorded in the previous year; the deaths among Asiatics decreased from 8 in 1912–13 to 1 in 1913–14. Nine European marriages were celebrated during the year. Native Christian marriages celebrated under the Christian Native Marriage Ordinance numbered 254. No organisation exists at present for the registration of marriage by native custom or for recording births and deaths among the native population. The health of the Protectorate generally was satisfactory during the year and there was no outbreak of epidemic or other sickness as a factor in the death-rate.

The investigation of ankylostome infection amongst natives was continued in various districts, and the results show that this disease prevails with about equal intensity throughout Nyasaland. In regard to sleeping sickness it may be said that up to the present there would appear to be no tendency to any spread of the disease. Sixty-four cases were reported during the year. The preventive measures which have been adopted consist mainly of clearings around villages and along some of the more frequented paths in the infected areas. Where extensive clearings have been made a quite appreciable diminution in the number of tsetse flies has been noticed. Only one case of small-pox was recorded, the patient having acquired the infection in the adjoining Portuguese territory. Measures were at once instituted to prevent any spread of infection, and proved completely successful. There has been no recurrence of small-pox in epidemic form since the year 1909, a result which is due to the systematic vaccination of the general population and which has removed one of the principal factors militating against a normal increase of population. The total number of vaccinations performed during the year was 143,052.

Excluding injuries and the commoner skin affections, the chief causes of sickness in order of frequency were digestive and bowel complaints, bronchitis, malaria, dysentery, and syphilis. Among the diseases with increased admission rates were malaria, respiratory disorders, venereal diseases, and tuberculosis. Chicken-pox and measles showed a considerable decrease. Malarial fever represented nearly 5·64 per cent. of the total admissions, and was most prevalent in January, February, and May, or, in other words, at the height of, and shortly after, the rainy season. The health of European officials has been satisfactory on the whole, and there have been no invalidings. There were two cases of enteric, one of which terminated fatally. The general adoption of quinine prophylaxis caused an appreciable decline in the admissions for malarial fever. In regard to the general European population, a large proportion of the sick are treated by mission doctors, and therefore do not come under the notice of the medical officers. Five deaths were recorded by the medical staff—viz., one each from malarial hyperpyrexia, cerebral embolism, myocarditis, appendicitis, and septicæmia. The number of European patients admitted into the Government hospitals amounted to 73.

The climate of Nyasaland falls into two main divisions: (1) that of the Shiré River Valley and Lake Nyasa; and (2) the other of the remaining districts of the Protectorate, which lie at a much higher elevation. There are consequently considerable variations in temperature and humidity, the low levels being hotter and drier than the highlands. The seasons comprise a rainy season, extending, as a rule, from the end of November to the end of March, and a dry season during the remaining portion of the year. During the past five years, however, there has been a tendency for the rains to commence later. The rainfall at Zomba observatory for the calendar year 1913 was 51·73 in., whilst at Mlanje station (2462 ft. above sea-level) it was 87·70 in. The mean temperature of the air at the observatory was 68° F., the highest temperature recorded being 92° on Oct. 15th, and the lowest 47° on June 14th.

"THE ELECTRIC TELEGRAPH ORIGINALLY PROPOSED BY A FRENCH MEDICAL PRACTITIONER."

IN view of the amount of telegraphy being done in all directions in the present war it may be interesting to recall the claim of a French medical man to be the pioneer. The first idea of telegraphing by means of an electric current, it appears, belongs to M. Henry, surgeon at Arnaville (Meurthe), who had so far back as 1836 established a correspondence by wires with M. Lapostolle, a well-known natural philosopher. The wires were made to run from the villa of the former to that of the latter gentleman: one shock signified A; two, B; three, C, &c. M. Henry wrote, on Oct. 31st, 1836, to the Minister of Commerce of Public Works, touching his telegraph, and received an answer stating that the invention had been submitted to the Board of Arts and Manufactures, who was of the opinion that the plan could not be applied on a large scale, and would not answer the expectations of the author. The latter was discouraged at this reply, and discontinued his experiments. Claims have been made on behalf of a Mr. Ronalds, of Hammersmith, who experimented from 1816 to 1823, but apparently only on his lawn.

"WOMEN POLICE."

IN reference to a note with the above heading which appeared in THE LANCET of March 27th, p. 686, Mrs. A. Gilbertson writes to us to point out that the women "patrols" who are employed by the National Union of Women Workers at Hove alone are officially authorised, and they do not pose as policewomen or wear a uniform, but are just what they claim to be, "patrols" only, wearing simply a badge.

SMALL-POX IN THE PHILIPPINE ISLANDS.

IN the second quarterly report for 1914 of the Bureau of Health for the Philippine Islands, Surgeon Victor G. Heiser says there has been practically no small-pox in the Philippine Islands for the period covered by the report save in provinces where regular vaccinations have not been carried out. In Samar and Leyte several hundred cases occurred, but these were confined almost entirely to unvaccinated individuals. This experience, it is pointed out, shows the great importance of prompt vaccination of all new-born children and other unvaccinated individuals who may come into the community of a province after it is once freed of small-pox. As an example, it is mentioned that in the city of Manila, where vaccination is thoroughly carried out, there has not been a death from small-pox since June, 1909.

THE MEDICAL PICKWICK.

To the Editor of THE LANCET.

SIR,—Your interesting note in THE LANCET of March 27th (p. 686) on this subject draws attention to the fact that Mr. Pickwick's "stormy interview with Dr. Payne and Dr. Slammer at the Bull at Rochester and his adventures with Bob Sawyer and Benjamin Allen are his closest relations with our profession." I am, however, inclined to think that Dickens was a reader of medical papers dealing with the anomalies and curiosities of medicine. Referring to one of the few pathetic scenes in the "Pickwick Papers" (published in 1836–37), the meeting of Mr. Pickwick with Mr. Alfred Jingle in the Fleet Prison, we read that after Mr. Alfred Jingle had told of how he had "lived on a pair of boots—whole fortnight, silk umbrella—ivory handle—week." "Oh," said Mr. Pickwick, "I understand you. You have pawned your wardrobe." This very closely follows the description George Alexander Stevens, author of "Satirical Songs" and a lecture on "Heads," gives of his life in the Fleet Prison in his famous letter to Dr. Miller, of Doncaster, published in Wadd's monograph on "Corpulency." Stevens, after stating that he had swallowed his whole wardrobe, goes on to say, "he was about to eat his last waistcoat," and continues: "Themistocles had many towns to furnish his table, and a whole city bore the charge of his meals. In some respects I am like him, for I am furnished by the labours of a multitude. A wig has fed me two days; the trimming of a waistcoat as long. A pair of velvet breeches paid my washerwoman; and a ruffled shirt has found me in shaving. My coats I swallowed by degrees; the sleeves I breakfasted on for weeks; the body, skirt, &c., served me for dinner two months. My silk stockings have paid my lodgings; and two pair of new pumps enabled me to soke several pipes. It is incredible how my appetite (barometer like) rises, in proportion as my necessities make their terrible advances. I here could say something droll about a good stomach; but it is ill jesting with edged tools, and I am sure that is the sharpest thing about me. You may think I can have no sense of my condition, that, while I am thus wretched, I should offer at ridicule: but people constituted like me, with a disproportioned levity of spirits, are always most merry when they are most miserable; and quicken like the eyes of the consumptive, which are always brightest the nearer the patient approaches dissolution. However, to show you I am not lost to all reflection, I think myself poor enough to want a favour and humble enough to ask it here. I might make an enconium on your good nature, humanity, &c.; but I shall not pay so bad a compliment to your understanding as to endeavour by a parade of phrases to win it over to my interests. If you could any night, at a concert, make a small collection for me it might be a means of my obtaining my liberty; and you well know the first people of rank abroad will perform the most friendly offices for the sick; be not, therefore, offended at the request of a poor (though deservedly punished) debtor."

Wadd's work was published by Ebers, of Old Bond-street, in 1829, and had a large circulation, being written in a popular style and containing many humorous anecdotes in its "Mems on Diet and Dietetics." It is, however, quite possible that Dickens never saw George Alexander Stevens's letter; but if so, it is an extraordinary coincidence that Jingle, when on his last legs, should give expression to Stevens's thoughts and proclaim them in the same prison.

I am, Sir, yours faithfully,
Dublin, March 29th, 1915. GEORGE FOY.

BEEF INSPECTION.

THE *Annali di Medicina Navale e Coloniale* has published a supplement on beef inspection, by Surgeon-Captain Dr. N. Ercole, of the Italian navy. The author takes a wide view of his subject, dealing with the inspection of live cattle, of carcasses, and of preserved meats. He discusses the tricks of the trade apt to mislead an examiner, and his statements concerning the daily length of march possible to a fat steer, and the loss of weight of overdriven cattle will be very informing to naval officers concerned with such questions. As to tubercle, any portion of a carcass is condemned whose lymphatic glands, even one of them, is tuberculous, and that portion is denatured and destroyed; if, however, the lesion is single and of small extent, the rest of the carcass is allowed to be sold, but must first be boiled for at least an hour. The author notes that the ilio-lumbar glands, if tuberculous, and only then, give off sulphuretted hydrogen when treated with sulphuric acid.

ST. LUCIA.

ACCORDING to the Blue-book for 1913–14 of this, the largest of the group of the Windward Islands, the population is estimated at 50,809—23,367 males and 27,442 females. The birth-rate (excluding stillbirths) was 34·5 per 1000 of the population, and the death-rate 17·4 per 1000. There was one death from snake-bite. The Victoria Hospital at Castries is the one general hospital for the colony. It is a fine stone building, well situated, and has been considerably improved of recent years. A trained nurse-matron from England assumed her duties in 1914. The daily average number of patients was 63. Small buildings are provided in the out districts at Soufrière, Dennery, and Vieux Fort, which are used as casualty hospitals for accident and emergency cases. In the Yaws Hospital there was a daily average of 22 patients. The voluntary influx of patients for treatment with the drug salvarsan continued unabated during the year, and 147 cases were treated; the number would have been much greater but for a shortage in the supply of the drug. The medical officer in charge, Dr. A. F. Hughes, reports that up to the time of his report he had treated 413 cases, and that out of this number there had been only 21 cases of recurrence of the disease. In the latter connexion the medical officer refers to the difficulty of distinguishing between *bonâ-fide* recurrences and cases of reinfection.

The average annual rainfall for the island, recorded at 25 stations, was 83·75 in.; the highest was 106·65 in., at Warwick Estate in the Choiseul district, and the lowest, 48·50 in., at Beausejor Estate in the Vieux Fort district. The mean monthly temperature recorded in the shade at the Botanic Station in Castries was 78·2° F. The maximum shade temperature of 89·5° was recorded on May 19th and Sept. 4th and the minimum of 62·0° on Feb. 19th.

COLLOSOL ARGENTUM IN CEREBRO-SPINAL MENINGITIS.

Messrs. Oppenheimer, Son, and Co., of Queen Victoria-street, London, E.C., state that collosol silver as prepared in the Crookes laboratories has been recommended as a prophylactic against attacks of cerebro-spinal meningitis. The series of collosols are destructive to all kinds of pathogenic bacteria, even when used in minute quantity. A special nebuliser (the Optimus) is made for using collosols as an inhalation or spray. It is constructed entirely of glass.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

THURSDAY.

SECTION OF DERMATOLOGY (Hon. Secretaries—S. E. Dore, A. M. H. Gray): at 5 P.M.

Demonstration of Cases (at 4.30 P.M.).

FRIDAY.

SECTION OF ELECTRO-THERAPEUTICS (Hon. Secretaries—S. Gilbert Scott, E. P. Cumberbatch): at 8.30 P.M.

Report of the Sub-committee on the Standardisation of the Opaque Meal, presented by Dr. R. Morton.

Discussion:

On the Opaque Meal Method of Examination.

The following will take part in the discussion:—Dr. Hertz, Dr. R. Morton, Dr. A. E. Barclay, Mr. Gilbert Scott.

Those wishing to join in the discussion please notify the Hon. Secretary as soon as possible.

HUNTERIAN SOCIETY, Barbers' Hall, Monkwell-street, E.C.

WEDNESDAY.—9 P.M., Papers:—Captain F. R. Humphreys, R.A.M.C.(T.): The Work of a Field Ambulance.—Dr E. Maynard: Experiences of a Temporary Naval Surgeon on H.M.S. *Carmania*.

SOUTH-WEST LONDON MEDICAL SOCIETY, Bolingbroke Hospital, Wandsworth Common, S.W.

WEDNESDAY—9 P.M, Mr. F. J. Steward: Colitis from the Surgical Standpoint.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY AND THURSDAY.—5 P.M., Oliver-Sharpey Lectures:—Mr. J. Barcroft: A Comparison between Some Physiological and Pathological Conditions.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

Museum Demonstrations for Advanced Students and Medical Practitioners:—

MONDAY.—Mr. Shattock: Specimens of Syphilis.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

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Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 7th, 1915.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
April 1	30·25	S.W.	0·04	83	54	35	37	39	Fine
,, 2	30·34	W.	0·27	87	53	39	41	43	Fine
,, 3	30·12	S.W.	...	55	49	43	45	47	Raining
,, 4	29·84	W.	...	99	59	49	49	51	Cloudy
,, 5	29·82	W.	...	70	53	41	43	45	Cloudy
,, 6	29·64	S.W.	0·22	72	49	41	43	45	Cloudy
,, 7	29·20	W.	...	97	54	45	44	48	Cloudy

The following magazines, journals, &c., have been received:— Indian Medical Gazette, British Journal of Inebriety, Caledonian Medical Journal, Pharmaceutical Journal, British Dental Journal, Journal of the Royal Sanitary Institute, Bulletin de L'Académie de Medécine, British Journal of Children's Diseases, Journal of Laryngology, Rhinology, and Otology, Medical Journal of South Africa, Nursing Record, Edinburgh Medical Journal, Practitioner, Eugenics Review, British Journal of Dental Science, Man, Therapeutic Gazette, Interstate Medical Journal, Public Health, Canadian Medical Association Journal, Canadian Journal of Medicine and Surgery, &c.

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An Address

ON

WOUND INFECTIONS

AND ON

SOME NEW METHODS FOR THE STUDY OF THE VARIOUS FACTORS WHICH COME INTO CONSIDERATION IN THEIR TREATMENT.

Delivered before the Royal Society of Medicine on March 30th,

By COLONEL SIR A. E. WRIGHT, M.D., F.R.S.,

A CONSULTING PHYSICIAN TO THE EXPEDITIONARY FORCE.

(From the Research Laboratory attached to No. 13 General Hospital, Boulogne-sur-Mer.)

(Continued from p. 741.)

What are the Factors which Influence the Emigration of White Blood Corpuscles into the Wound?

I PASS now to consider yet another subject-matter—the emigration of leucocytes into the wound. I need not labour the point that this is a factor which may determine the issue of an infection; nor need I point out that it behoves us to acquire a control over the movement of leucocytes, and then to turn this to account, as the case may be, by activating or restraining emigration.

Broad foundations for our work have, as you know, already been laid by the brilliant researches of Metchnikoff. But it was with Metchnikoff always a question of experiments *in vivo*—that is, of experiments carried out under conditions which cannot be sufficiently simplified to give quite unambiguous answers. And we require for the elucidation of our problems and for all detail work connected therewith, absolutely simple crucial experiments, such as can only be made *in vitro*.

The line of thought which I have followed in elaborating a laboratory method for the study of the phenomena of emigration is the following:—The leucocytes in extravascular blood are known to retain their emigrating power. A difficulty will, however, when we are working with extravascular blood, attach to our observations by reason of the fact that we have not at disposal such a containing membrane as the capillary wall. We are, in fact, in dealing with extravascular blood confronted with a situation similar to that which would be encountered in observations *in vivo* if the capillary walls were to give way, and we had to make observations on emigration in a portion of tissue which was flooded out by red corpuscles.

I had hoped at first to be able to circumvent this difficulty by taking advantage of the fact that when clotting occurs the red blood corpuscles become enclosed in a meshwork of fibrin, after the manner of fish in a net. But all my efforts to make the fibrin meshwork take over the office of a containing membrane were defeated. No matter how tenderly the clot was treated the meshes of the net broke, and hæmorrhage from the clot interfered with the observations.

A second difficulty also presented itself. When in the living body white corpuscles emigrate into connective tissue it is possible to register their travel because they move forward through a retaining meshwork. It would not be possible to do so if they merely passed out into fluid, to be afterwards carried hither and thither by every chance convection current. Exactly the same applies to the extravascular blood. The emigrating leucocyte must be provided with some sort of scantling to move forward upon, and come to rest in.

After a time I alighted on a method which satisfies the two aforementioned experimental requirements, and which, as I think, provides all that is required for a quantitative estimation of emigration. Let me first tell you the general lines upon which the method proceeds, and then set out the details of the technique.

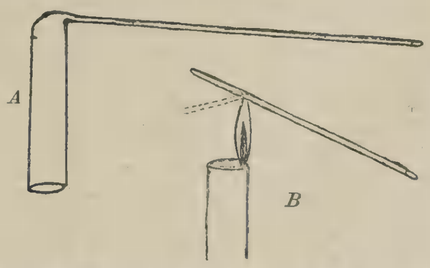
Principle of the Method Employed for making Observations on Emigration.

The principle of the method is as follows:—We fill in a capillary tube with blood from a prick in the finger, immediately place the capillary tube in the centrifuge, and centrifugalise until we have carried down all the corpuscles. We have now in the upper half of the tube a plasma which has been completely freed from all formed elements; and in the lower half of the tube, at the bottom, the red blood corpuscles intermixed with a certain number of polynuclear white blood corpuscles; and above this a layer made up predominantly of white blood corpuscles—these last in the front ranks consisting almost exclusively of small and large mononuclears. The blood now clots. And this gives in the upper half of the tube a clot consisting of fibrin without any formed elements—let us call this the *white clot*—and in the lower half of the tube a clot—let us call this the *red clot*—which holds all the corpuscles in its meshes. When a chemotactic stimulus now comes into application from above the white blood corpuscles will come out from the red clot and will travel upwards through the meshes of the white clot—afterwards maintaining their positions so as to allow of our making measurements and enumerations. We will now pass to the details of the technique.

Details relating to Apparatus and Procedure.

With regard to apparatus, all that is required is a supply of flat capillary tubes. By using flattened capillary tubes we obtain a thin clot, which can more easily be examined under the microscope.

Fig. 5.



Method of making emigration tubes. A, Method of giving the flattened conformation to the capillary stem. B, Method of binding the tube round to form an elbow.

We make these tubes—and they may conveniently be called emigration or chemotactic tubes—either out of a small test-tube, or out of a length of fairly wide-bored glass tubing. We heat in the blowpipe flame until the glass becomes very plastic; then, making a sharp outward turn with the right wrist, bend the tube round through a right angle, giving it the proper flattened conformation; and then draw out into a long flat capillary stem. (Fig. 5, A). We then cut this through at the point where it begins to lose its flattened conformation; and so leave attached to the next segment a sufficient length of tube to take hold of when we go to work upon

No. 4781.

it. When a sufficient number of lengths of flattened stem have been provided, we cut these up into segments of about 8 cm. in length; arrange them side by side after the manner of a palisade; and then with our glass writing pencil rule two lines across the face of our tubes. The first of these lines ought to fall somewhere in the middle. It is to serve as a fiducial mark for filling in the blood from the finger. The second line, which may conveniently fall at a point to about half or three-quarters of a centimetre to the end of the tube, is to serve as a fiducial mark in filling in the chemical agent whose effect we are to study.

The tube may now be used just as it is: or we may before using it furnish it with a syphon-curve by bending it round at the level of our second fiducial mark. We do this by taking up each tube separately, holding it horizontally, and then passing it rapidly to and fro through a small by-pass flame. The action of gravity will then, as soon as the glass softens, bend round the tube for us. (Fig. 5, B.)

Method of Using the Emigration Tubes and Bringing the Chemotactic Agent into Application.

The emigration tube is first filled in up to the midway point with blood drawn from a puncture in the finger. In the case where we employ a bent tube this is done by letting the blood flow in through the syphon curve.

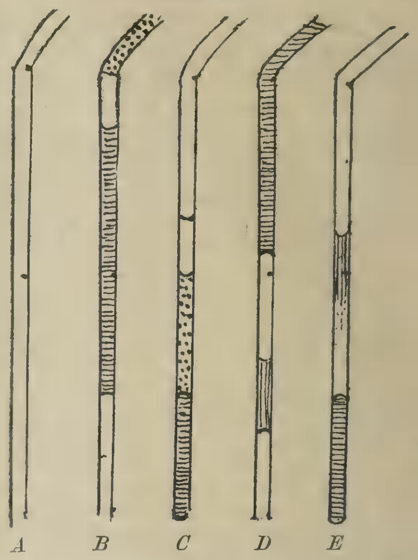
The chemotactic agent can now be brought into application in three different ways.

1. *It may simply be superimposed upon the clotted blood.* This is done by using a *filiform pipette*, made by heating the stem of an ordinary capillary pipette in a small by-pass flame and drawing out, while we with a rubber teat apply internal pressure to prevent the walls of the hair-fine tube collapsing. Considered as a method for bringing a chemotactic agent into immediate application, this method falls short in the respect that the chemical has to diffuse down through the whole white clot before it comes into operation. In view of this, the method does not lend itself to the institution of any comparisons between normal blood and anæmic blood. For the experimental conditions are not comparable when our chemotactic agent has, in the one case, to diffuse through a length corresponding to half the column of blood; and, in the other case, through a length which may amount to nine-tenths of that column.

2. The *second* method of bringing the chemotactic agent into application is that of *superimposing the chemotactic agent upon the unclotted blood.* (Fig. 6, B and C.) Having filled in a curved emigration tube up to mid-point mark with blood; we tilt the tube so as to take in a dividing bubble of air; then fill it up as far as the elbow with the chemotactic agent; and then, after sealing up the distal end of the tube, proceed to centrifuge. This method is applicable, in particular, when we are working with bacterial suspensions; for while the watery suspending fluid remains, by reason of its light specific gravity, on the top, the microbes are, by virtue of their higher specific gravity, carried down into the plasma, to be embedded in the white clot all the way down to the leucocytic layer.

3. The *third* method is the method of *traversing.* (Fig. 6, D and E.) In employing this we may use either a straight or a bent emigration tube. We fill in, first, with our column of blood; then follow on with the dividing bubble of air; and then, making use of the forerunning column of blood to serve as a brake, fill in up to the fiducial point with the chemotactic agent.[1] Finally, we seal up that end of the tube which has served as an inlet and place the tube in the centrifuge.

FIG. 6.



Method of adding chemotactic fluid to blood. A, Curved emigration tube, empty. B, Tube filled in with a column of blood, a dividing air bubble, and then, as far as the elbow, with a bacterial suspension. C, Tube after centrifugalisation. The bottom of the tube is occupied by the "red clot," and the intermediate portion by the "white clot" and implanted bacteria; at the top is the watery menstruum in which the bacteria were suspended. D, Tube filled in for traversing. In the lower portion of the capillary stem is the chemotactic agent; in the upper part the column of blood. E, Tube after centrifugalisation. The bottom of the tube is occupied by the "red clot"; the intermediate portion by the "white clot," containing traces of the chemotactic agent. At the top the watery menstruum containing the bulk of this agent.

Our chemotactic agent will now traverse the column of blood and take up a position at the top, leaving behind it in the plasma traces of whatever chemical it holds in solution. That this is what actually happens, can be shown by employing, in place of a colourless chemotactic agent, a solution of methylene blue, or simple water. This last, when it follows on after a column of blood and dissolves the red blood corpuscles which this leaves in its wake, will come out at the top coloured with hæmoglobin.

The traversing procedure will be applicable in the case where we want to bring into operation chemical agents, and especially applicable where we want to bring such agents into instant application.

When we are working with a series of tubes, as will practically always be the case, it will be well to place each, as soon as it is filled, into iced water, or ordinary cold water. The buckets of the centrifuge will serve as convenient receptacles. After centrifugalisation the emigration tubes are placed in the incubator, according to circumstances, for from three to twelve hours or more. While in the incubator the tubes may conveniently be placed upright—i.e., with the white clot uppermost—in plasticine. They may also be laid on their sides, tilted a little upwards. The inverted position is to be avoided. For when we invert our tubes we bring down into the white clot a shower of red corpuscles which block emigration, and also obscure the view.

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[1] In practice the procedure of traversing is to be carried out exactly as here described. In the illustration, Fig. 6, D, in order to convey the idea of traversing to the eye, the chemotactic agent precedes instead of following the column of blood.

Method of Bringing the Emigration Effect into View and taking Cognisance of the Results.

When all we want, is to get a general idea of what is going on in the tubes, we can obtain this by introducing the unopened tube into an observation cell. A very simple form of observation cell can be made by placing small pellets of plasticine upon each of the four corners of a microscopic slide, covering in with another slide —allowing a little overlap—and then filling into the interspace either water or some more highly refractive fluid, such as glycerine or oil. By observing in such a cell we bring into view not only the leucocytes which have emigrated into the white clot, but also those which have escaped into the interspace which may develop between the clot and the walls of the capillary tube.[2]

For all purposes of quantitative observation we blow out our clots into water, wash carefully so as to remove leucocytes adhering to their exterior, and then mount them on a slide. We then, after cutting off the surplusage of red clot, fix by drying, and stain for a few minutes in Kühne's methylene blue freely diluted. The specimens are examined, first, dry or in water, under a low power objective, and afterwards in oil under an immersion. (See Fig. 7.)

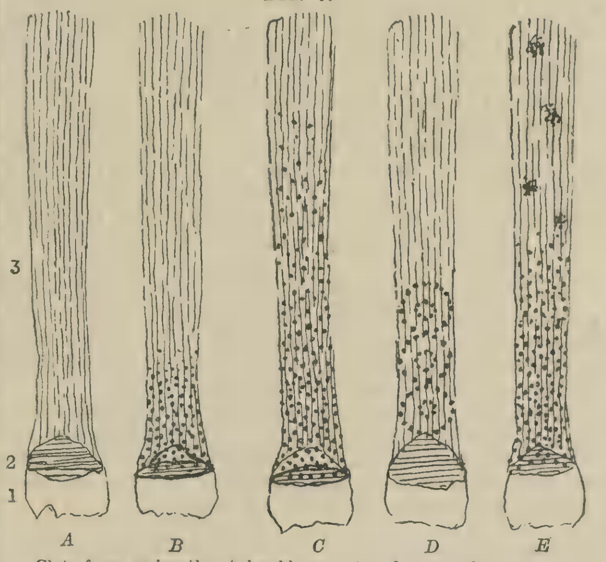
General Considerations relating to the Movements of White Blood Corpuscles.

Before passing to consider the question how it will be possible to arrive at a quantitative expression for the leucocytic movements induced by a chemotactic agent, it will be well to take a general survey of the things that present themselves to view in every emigration tube.

We have to take into account in connexion with white blood corpuscles two kinds of movements. We have, on the one hand, a process of wandering at large; and, on the other hand, a directed movement—i.e., a movement along some particular axis—undertaken under the direction of a chemical stimulus. We may call the first kind of movement an *eleutherotropic* movement. The second is usually known as a *chemotactic*—I prefer to call it a *chemotropic*—movement. It is, of course, the latter, not the former kind of movement which we are here primarily concerned to study. For clearly it is the chemotactically directed movements of the leucocytes towards the bacterial focus, and not their wanderings at large, which come into consideration in any conflict against infection.

None the less, a word may be said about eleutherotropic movements. One finds in every specimen of blood which has been simply centrifugalised and placed in an incubator, always a certain wandering at large of the leucocytes—in particular, the mononuclear white blood corpuscles, which have been tightly packed together by the action of the centrifuge and are ranged at the top of the red clot, leave their ranks and wander out into the adjacent regions of the white clot. The polynuclear leucocytes also are affected by eleutherotropic wandering. They come out from the hinder ranks of the leucocytic layer, and also from deeper down in the red clot, and wander free. In our observations we leave out of account all those leucocytes that have wandered outside the white clot. We regard them as having run to waste.

FIG. 7.



Clots from emigration tubes blown out and mounted: A, no emigration; B, compact emigration; C, dispersed emigration; D, method of enumerating leucocytes which have emigrated; E, bacterial colonies coming up only in portion of clot which has not been reached by the emigrating leucocytes.

A further point which claims attention in connexion with emigration is the *nature of the emigrating leucocytes.*

Ordinary *eleutherotropic emigration* is predominantly mononuclear, this being probably accounted for by the fact that the white blood corpuscles which are ranged up along the line which divides the red from the white clot are almost all mononuclear. In *chemotactic emigration* we have either a differential emigration of polynuclear white corpuscles, or a mixed mononuclear and polynuclear emigration in which either the one or the other of these varieties of leucocytes may predominate. In all such mixed emigrations the polynuclear, presumably because they are faster of foot, overtake the mononuclear, leucocytes and pass on and occupy the more distal portion of the field of emigration.

Method of Arriving at a Quantitative Expression respectively for "Compact" and "Dispersed Emigration."

A quantitative expression for the emigration movement which takes place in a capillary tube can be arrived at in two ways. When we are dealing with a *compact* emigration (Fig. 7, B)—that is, where the field of emigration is quite closely packed with leucocytes—we have simply to measure the area of that field, or (and this answers the purpose perfectly well) the length of clot occupied by the emigration; and we may conveniently measure it in terms of microscopic fields. In such measurements we take off from the base-line furnished by the distal border of the cone of leucocytes which occupies the base of the white clot. This represents the original leucocytic layer converted, by the contraction of the fibrin, into a cap covering the upper end of the red clot. (Fig. 7, C.)

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[2] Attention may, in connexion with this, be called to facts which have an importance and a useful application in medicine, which happen to have also an importance and a useful application in connexion with the emigration method here under consideration. The facts I have in view are as follows. The blood of a person suffering from chilblains, or any other manifestation of a lowered blood coagulability, will, on centrifugalisation, generally fail to give the kind of white clot we require for our emigration experiments—i.e., one that is firm and non-contractile. This condition of things can be remedied by the exhibition of calcium salts, or, as the case may be, by appropriate additions of these salts made to the blood when filling our capillary tubes. I would in connexion with this emphasise that we have here brought into clear view what is the really material factor in connexion with the effect exerted by calcium salts in the blood.

And I may perhaps be permitted to point out, in connexion with my own work on calcium as an agent for promoting and citric acid as an agent for diminishing coagulability (Brit. Med. Jour., July 29th, 1893, and July, 1894; THE LANCET, Jan. 18th, 1896, and Jan. 30th, 1897), that while what I have said with reference to the clinical effects exerted has been, I believe, universally confirmed and accepted; what I have said with respect to the effect on the coagulability of blood *in vitro* has been traversed. This stands, as I believe, in relation to the fact that the laboratory workers who have repeated my work have employed methods which took into account rapidity, but left out of account firmness, of coagulation. It will now, I hope, by adopting the method of centrifugalising, and watching the effect exerted upon plasma which has been disembarrassed of corpuscles, be possible to arrive at unanimity in these matters. Finally, I may direct attention to the fact that what comes into view in centrifuged, is seen also in uncentrifuged, blood. When we make to this appropriate additions of calcium salts we obtain, as I long ago pointed out, a firmer and non-contractile clot.

When, as will happen when a longer time has been allowed for the wandering out and dispersion of the leucocytes, we have before us a *dispersed emigration* it will no longer suffice simply to measure the distance the leucocytes have travelled into the clot. It now becomes necessary to enumerate the emigrating cells. Employing first a low-power lens, we bring the upper edge of the cap of leucocytes to the extreme edge of our field of view. Then turning to our oil immersion, we bring this down upon the central portion of the low-power field, and make a count of all the leucocytes which lie within its purview—when necessary, helping ourselves out in our count. by introducing into the diaphragm of our eyepiece a cover-glass divided up by light rulings, made with a glass writing pencil. Having obtained in this way a value for the emigration in an arbitrarily selected portion of the first microscopic field, we go back to our low-power objective and move our specimen along until the objects on the extreme distal margin have been carried right across the field, and now lie just out of view on the other side. The further steps in the procedure are now simple repetition.

What are obtained by this method of enumeration are, of course, only arbitrary figures, and it will be realised that the comparative values arrived at will be strictly accurate only where we are employing clots of similar thickness.

Survey of the Data which the Method has Already Given.

We may now pass on to consider some of the data that the method has already given. White blood corpuscles will move out in any direction towards a chemotactic substance. They will, however, emigrate more freely downwards, than horizontally; and more freely horizontally, than upwards.

Anaerobic conditions are more favourable to emigration than aerobic conditions. Leucocytes will travel out further in the direction of a chemotactic substance when we absorb the oxygen in the tube with caustic alkali and pyrogallic acid and seal, than when we leave the end of the tube open to the air.

Leucocytes emigrate more abundantly in tubes standing at a temperature of 40° C. than in tubes standing at 37°. They do not emigrate at temperatures of 10° to 15°—the temperatures which prevailed on our laboratory bench. After exposure to temperatures of 0° C. for periods of half to one hour they emigrate apparently as freely as before.

Emigration apparently goes on unaffected in the presence of ether. It is abolished or suspended in an atmosphere of chloroform.

Physiological salt solution, brought into application either by traversing or by superimposing it upon the clotted or unclotted blood, induces a very vigorous emigration of polynuclear white blood corpuscles. Weaker salt solutions induce a less vigorous emigration, and water again a less vigorous. Strong salt solutions—for example 5 per cent. salt solutions—suppress emigration.

It will be appreciated in connexion with these and all findings obtained by this method, that they do not tell us the effect of reagents acting in the specified dilutions directly upon leucocytes, but only the effect of these reagents operating from a distance. In other words, our experiments do not furnish information as to what would be the effect of bringing the chemical agents in the specified concentrations directly in relation with the capillary wall.

Bacterial suspensions which have been sterilised by heating evoke, according to the dilution in which they come into application, quite different effects. The general rule applying to bacterial suspensions would seem to be as follows. Concentrated suspensions usually completely suppress emigration. Ten or hundredfold diluted, these same suspensions evoke vigorous emigration. When we employ progressively higher dilutions we arrive in time at a point when the effect of the bacterial suspensions is exactly the same as those of the articular fluid which we are employing as a diluent.

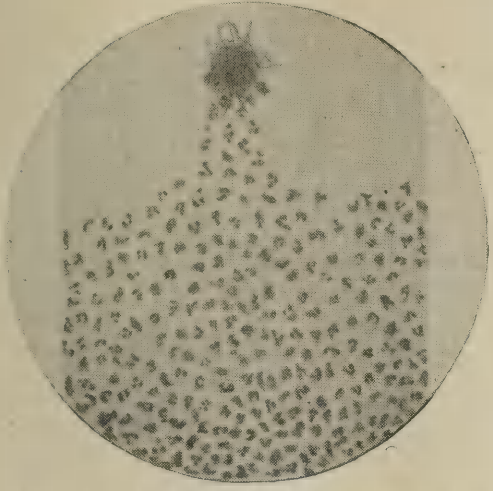
Normal bloods tested with one and the same series of bacterial suspensions exhibit quite different degrees of chemotropic sensibility. Chemotropic sensibility, not alone to bacterial suspensions but also to physiological salt solution, is very strikingly modified in the case of patients suffering from bacterial infections. The same applies to persons inoculated with streptococcic vaccines. In five out of six men, inoculated with such a vaccine and examined both before and afterwards, the emigrating response to streptococcus was subsequently to inoculation very strikingly increased. In the case of one man it was diminished.

Results somewhat similar to those obtained with dead cultures are obtained with suspensions of living microbes (streptococci and gas phlegmon bacilli), but here the prolonging of the incubation period may strikingly alter the situation.

What generally happens may be summed up as follows. When, by superimposing and centrifuging, a heavy sowing of microbes has been implanted into the unclotted blood, the colonies come up all along the white clot, and emigration into this is completely checked. Where only a moderate implantation of microbes has been made, we have in different parts of the clot different results:—Bacterial colonies develop freely in the distal area of the clot which is not invaded by emigration. In the intermediate region—that is, in the region where the microbes can grow out before the leucocytes arrive—one sees with the low-power objective areas specially crowded with leucocytes—these are in point of fact colonies which are being broken up and dispersed by invading leucocytes (Fig. 8);—and with the oil immersion one sees that every leucocyte in these crowded masses is taking up microbes, and that there is also in all this region of the clot plentiful phagocytosis of scattered microbes. (Fig. 9.) In the base of the white clot—i.e., in the area where emigration has occurred earliest and most vigorously—one finds absolutely no trace of microbial growth.

The appearances which have just been described correspond, of course, to a period of conflict. This conflict is generally at its most interesting phase in tubes which have been incubated from three to six hours. When we come later—for instance, after 12 or more hours—the conflict is over. We then find either that the white corpuscles are masters of the field, and the microbes have disappeared, or else that the microbes have invaded the whole clot, and that this crumbles away as soon as it is blown out into water. There can be little doubt that the crumbling away of the clot, and the overrunning of the blood with microbes are due to the digestion of the fibrin, and the corruption of the blood fluids by trypsin set free from the disintegrated leucocytes.

FIG. 8.



Extreme limit of emigration, showing phagocytes attacking streptococcus colony.

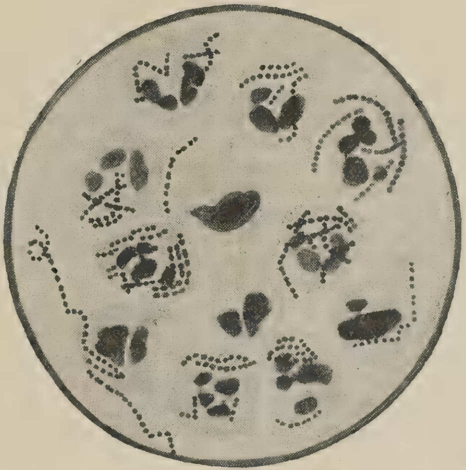
Experiments such as these just outlined in which living microbes are brought into application on blood provide in point of fact a valuable test method. They tell us the resultant of the *chemotropic sensibility* of the leucocytes, the *opsonic power* of the blood fluids, the *digestive capacity* of those phagocytes which come into action, and of the *antitryptic* and, where such comes into account, the *bactericidal* power of the blood fluids. We are, in fact, furnished with something like a complete evaluation of the antibacterial powers of the blood.[3] There is still one element left out of account. The test method here in question does not tell us anything as to whether or no there are bacterial poisons in solution in the blood fluids of the infected man. But this is a question which can be separately investigated. I have tried to find the answer by traversing normal bloods with the sera derived from patients suffering from septicæmic infections. And I have by this procedure obtained in a series of cases what appeared to be a definitely chemotropic emigration.

All that has been recounted above is, of course, only a very small beginning. But I think we may be confident that the method for the study of emigration which has here been proposed will resolve important problems in connexion with infection generally, and also—and this is what specially concerns us here—some of the problems in connexion with wound infections which are now urgently pressing for a solution.

In the matter of general problems of infection it would, I think, be possible, by implanting bacteria into blood in combination with chemical agents which would respectively promote and hinder emigration, to resolve for each particular bacterial infection, the question as to whether it is the leucocytes or the blood fluids which come most into consideration as destructive agencies. That problem once resolved, we should know whether we ought in the infection in question to direct our chief efforts to increasing the efficacy of the blood fluids, or to modifying the chemotropic sensibility of the leucocytes and encouraging emigration.

Again, it looks as if it might be possible by very simple experiments to resolve the problem as to why in gonorrhœa, and also in other surface infections, the purulent discharge is suddenly arrested when the microbes succeed in invading the blood stream, or establishing themselves in an articulation or elsewhere in the interior of the body. It would seem possible—for something of this sort would seem to occur in septicæmias supervening on wound infections—that we may be dealing here with a paralysis of the emigrating powers of the leucocytes. Or, again, it is possible that in these cases emigration may be simply suspended by a redistribution of the chemotactic forces. In other words, the cessation of the external discharge may simply mean that there is now in the blood a bacterial poison; and that this chemotactic element, acting upon the leucocytes as a *vis a tergo*, counterbalances the *vis a fronte* of the chemotactic substances produced by the bacteria on the external surfaces.

FIG. 9.



Phagocytosis of streptococcus towards extreme limit of emigration.

In connexion with the particular problems of wound infections we may hope at no distant date to come into possession of information which will enable us to activate or restrain, according as the one or the other may approve itself the better policy, the emigration of leucocytes into the wound. And we may hope also to determine in connexion with every antiseptic or other solution which is brought into application in a wound, whether it promotes or hinders emigration.

Finally, let me point out—for everything that concerns bacterial vaccines concerns the treatment of wound infections—that experiments on emigration will almost certainly resolve a number of important outstanding questions in connexion with vaccines. They ought very easily to resolve the question as to what is the best excipient for a vaccine—whether a menstruum which would restrain emigration, or one, like physiological salt solution, which would call forth a vigorous emigrating response at the point of injection. And lastly—and this would be one of the most important applications of observations on emigration—we ought to be able to determine what is in the case of each bacterial vaccine the dose which will induce the earliest possible and the most effective determination of phagocytes to the focus or foci of infection.

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[3] It will be observed in connexion with tests thus conducted with centrifuged blood that, if we leave out of regard the centrifugalisation, they are in all essentials the same as the *phagocyto-bactericidal* tests with freshly drawn uncentrifuged blood which I have already described (Vaccines and Drugs in Pneumonia, Constable, 1914).

(*To be continued.*)

ON THE PENETRATING POWER OF THE X RAYS FROM THE COOLIDGE TUBE.

BY SIDNEY RUSS, D.Sc.

A Coolidge X ray tube having been acquired by the electro-therapeutical department of the Middlesex Hospital, Mr. C. R. C. Lyster requested me to make some measurements of the radiation emitted from it, preparatory to its being put into clinical use. The results of a first systematic series of tests upon it were communicated to the February meeting of the Roentgen Society. The leading features of the observations were: (1) The recognition that the unscreened radiation from the bulb was heterogeneous, consisting of "soft," "medium," and "hard" rays; and (2) the relatively larger production of "hard" rays than of "soft" rays when the heating current, regulating the cathode stream, was increased.

Since the meeting referred to, the observations on the bulb have been continued with two objects in view—first, to measure the hardness of the rays which would be used clinically (for superficial and for deep-seated conditions); and, secondly, to find how nearly the most penetrating rays given out from the bulb approach the penetrating power of the hard gamma rays from radium. It was assumed that for superficial conditions unscreened "soft" and "medium" rays would be used, and that for deep-seated conditions the rays would be heavily filtered by aluminium; accordingly measurements were made of the character of the rays under these circumstances. This was done by finding how the intensity of the beam of X rays was reduced on interposing sheets of aluminium between the bulb and a small gold-leaf electroscope used to measure this intensity.

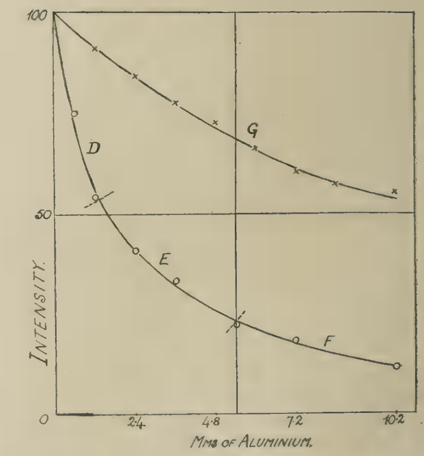
When measuring the unscreened rays the bulb was run under a moderate sparking distance (3 cm. between spheres 5 cm. in diameter, corresponding to about 11 cm. between points). The gradual reduction in the intensity of the radiation as increasing thicknesses of aluminium are interposed is shown in Curve 1, Fig. 1. When this curve is analysed it is found to consist of approximately three portions, which may be considered as Section D, in which the rays are "soft" and therefore easily absorbed; Section E, where they are rather more penetrating; and Section F, where they are considerably "harder." The beam is, as stated, heterogeneous.

The observations upon heavily screened rays were made as follows. For the same heating current as before the spark-gap was increased to nearly the limit of the coil (viz., 10 cm. between the spheres or 30 cm. between points) and the rays were screened by 7 mm. of aluminium. The character of the rays which penetrated this filter was found in the manner described, and the absorption suffered in going through various thicknesses of aluminium is shown in Curve 2 of the same figure. Analysis of this curve shows that the rays are very hard and practically of a homogeneous nature.

The introduction of as much as 7 mm. of aluminium for the purpose of screening effects a considerable reduction in the intensity of the rays, but, granted that at least 3 or 4 mm. are necessary, it remains to determine whether the extra amount of aluminium, by which homogeneity is attained, entails too large a reduction in the quantity of rays available for use; the beam is not quite homogeneous with 4 mm. screening. Actually it is found that this extra 3 mm. entails a diminution of nearly 25 per cent. in the intensity of the beam already screened by 4 mm. of aluminium. Apart from any desirable physiological effects which the hardest X rays may give rise to, the use of a homogeneous beam ensures the most uniform irradiation throughout the tissues that is possible, assuming that such application has to be made externally; moreover, it allows of an accurate determination of the strength of the radiation at any particular depth of tissue.

The results represented in Fig. 1 were obtained by using aluminium as the absorbing substance for the rays; this is a matter of convenience, for the pure material is obtainable in sheets of any required thickness. When it is desired to apply the data to determine the gradual loss of intensity of X rays as they make their way through the tissues certain precautions are necessary. If we consider that the tissues of the human body have on an average about the same density as water, then if we knew the relative transparency of water and aluminium for X rays of any specified quality we could gauge the absorption which the tissues would exercise upon any particular beam of X rays.

FIG. 1.



When experiments are made to determine this relation between water and aluminium it is found that in the case of soft X rays water (and therefore tissues also) absorbs them much less than its density would suggest, actually about one-fourth part; hence, since aluminium is 2·7 times the density of water, 1 mm. of aluminium absorbs as much 4 × 2·7 = 10·8 mm. of tissue. As one passes to rays of a more penetrating character water becomes relatively to aluminium a better absorber, and when the homogeneous rays transmitted through 7 mm. aluminium are reached, the factor 1/4 has reached 3/4, so that 1 mm. of aluminium is now equivalent to 4/3 × 2·7 = 3·6 mm. of tissue.

The data are now available for calculating the degree to which the dose of X rays administered varies from point to point in the tissues. As an illustration of this we may consider the case of some condition being treated by X rays screened in the manner indicated. Let it be assumed that the thickness of tissue is 16 cm. and that the surface of the skin is 20 cm. from the anode—the data in the accompanying table show what the intensity would be at different depths below the surface, the gradual diminution being due to two causes—increase in distance from the anode and absorption of the rays by the superimposed tissues, both of which are taken into account in the data given. Column (*a*) represents the fall in intensity where the radiation is in one direction, and column (*b*) when the direction is reversed. The total in column (*c*) shows the variation throughout the tissues when the radiation is reversed in the manner indicated.

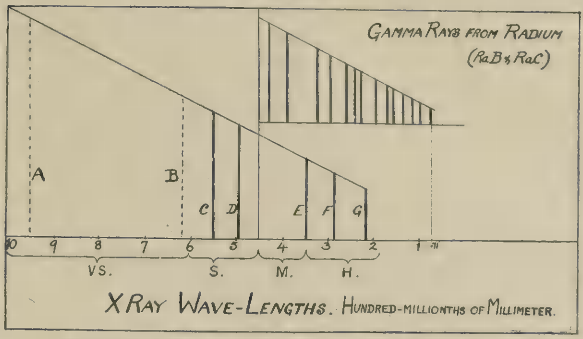
Depth below surface.	Intensity of rays. (*a*)	(*b*)	Total. (*c*)
0	100·0	1·8	101·8
2 cm.	57·6	2·8	60·4
4 ,,	33·8	4·5	38·3
6 ,,	20·0	7·2	27·2
8 ,,	12·1	12·1	24·2
10 ,,	7·2	20·0	27·2
12 ,,	4·5	33·8	38·3
14 ,,	2·8	57·6	60·4
16 ,,	1·8	100·0	101·8

The question as to how nearly the X rays approach in penetrating power that of the hard gamma rays of radium cannot be answered without specifying the substance which is used to test the penetrating power. For example, if we make a comparison in this respect for lead we find that the X rays emitted from the Coolidge tube, under a spark-gap of 30 cm. (points) and screened by nearly 2 mm. of lead and 7 mm. of aluminium, have about one-thirtieth of the penetrating power of hard gamma rays. If, however, the comparison be made with aluminium under the same conditions, the X rays have a penetrating power of nearly one-fifth of that of the gamma rays, and nearly one-fourth if the comparison be made with water (tissues).

These observations do not preclude the possibility of still more penetrating X rays being produced, but under the conditions specified the above figures represent what holds for the main part of the radiation; if harder X rays are present they do not contribute more than about 1 part in 50 to the effects associated with the heavily screened radiation. By the term "hard gamma rays" is meant the radiation emitted from radium enclosed in a platinum tube 1 mm. thick, the softer secondary rays from the platinum itself being absorbed by 2 mm. of aluminium.

The investigations initiated by Lane in 1912 have been pursued in this country by W. H. Bragg and W. L. Bragg and by Moseley and Darwin, proving conclusively that the X rays are ether vibrations, and many determinations of the wave-length of certain specified rays have now been made. The two latter investigators have shown that the wave-length of an X ray may be inferred if the extent to which the ray is absorbed by some substance, such as aluminium, is known. There is a simple relation between the coefficient of absorption and the wave-length as long as one is not considering regions exhibiting selective absorption. We may make use of this relation to find the average wave-length of the different components constituting the heterogeneous beam whose absorption is represented by the curve (Fig. 1). Dividing this into sections in the way that analysis suggests that it should be done, it will be found that the wave-lengths for the three sections D, E, and F are 4·85, 3·43, and 2·84 × 10^{-9} cm. respectively, and these are represented by the vertical lines on the lower diagram of Fig. 2, the length of the line being drawn proportional to the wave-length. Line C is obtained as a result of measurements with a very soft bulb (about 6 cm. spark-gap), and line G with a wave-length of 2·14 × 10^{-9} cm. represents the homogeneous very hard X rays obtained under the conditions already specified. On the same diagram are inserted two wave-lengths, A, B, which correspond to part of the characteristic radiation emitted by platinum and rhodium. The data for them are taken from "X Rays and Crystal Structure" (1915), by W. H. Bragg and W. L. Bragg. An inset in Fig. 2 shows the wave-lengths of the gamma rays emitted by radium (RaB and RaC) as determined by Rutherford and Andrade (*vide Philosophical Magazine*, August, 1914).

FIG. 2.



VS. = very soft. S. = soft. M. = medium. H. = hard.

The representation in this manner—viz., C–G—of the different varieties of X rays must not be taken to mean that the rays emitted consist of homogeneous portions; the radiation is much more akin to white light, but certain regions appear homogeneous when tested by the method of absorption. The subdivisions "very soft," &c., are quite arbitrary, and done for the purposes of the present article. It is hoped that the Dosage Committee of the Roentgen Society will make certain recommendations on this subject in the near future.

A comparison of the two sets of wave-lengths shows that the wave-length of the very hard X rays (deduced from their absorption by aluminium) is about three times that of the shortest gamma ray measured by Rutherford and Andrade. With regard to the possibility of producing X rays with the same wave-length as the hardest gamma rays, it would seem that the advent of the Coolidge tube should bring this realisation nearer than experience with the ordinary focus-tube suggested.

There is a tendency towards the more extensive use of hard screened X rays. This brings with it the consideration that the operator is subject to an increasing amount of stray radiation. The yield of X rays from modern bulbs is a very large one, and the question of protection of all those engaged in the administration of the rays becomes an increasingly difficult one.

NEW THEORIES AND INVESTIGATIONS CONCERNING PELLAGRA.

By ALBERTO CENCELLI,
SENATOR; PRESIDENT OF THE PELLAGRA COMMISSION OF ROME.

(*Specially Translated for* The Lancet.)

Pellagra is, without doubt, one of the diseases that for more than a century have been the subject of discussion both with Italian and foreign doctors. This complaint, which not only carries off countless victims, and robs agriculture of many able-bodied workers, as well as filling hospitals and lunatic asylums, is not yet vanquished. Men of science are in continual disagreement with one another, and have not yet decided upon the nature of pellagra and its determining cause, far less have they been able to point out the measures to be adopted for its cure and prevention.

Until comparatively recently, maize was generally considered to be the cause of the disease, and it was thought from the investigations first of Sette and Balardi, and subsequently of Lombroso and his school, that it was probably due to (1) the insufficient nutritive value of this cereal; (2) toxic substances found in sound or in spoilt maize; (3) special toxins produced by certain moulds which develop in maize under particular conditions; (4) the increase in virulence of Bacillus coli in the intestine attributable to a maize diet, although the corn is in good condition; (5) the action of definite pathogenic agents introduced into the organism at the time of the ingestion of the maize. Upon these principles and theories are based all the Italian legislative measures for the prevention and cure of pellagra. But the very numerous facts recorded by many scientists in Italy and other countries who have studied the question thoroughly and with much devotion, have proved that maize can no longer be regarded as the sole and specific cause of the disease.

Briefly summarised, the facts are as follows: There are many sufferers from pellagra who have *never* lived on maize; entire districts in Italy (Molise, Campania, Basilicata, Calabria, Liguria) and abroad (Brazil) where good, mediocre, and bad maize are used to an extraordinary degree, in fact almost exclusively, are free from the disease, while in some provinces and communes where pellagra is common, immune zones exist, the latter being clearly marked off from the infected areas, although the climatic, economic, hygienic, and dietetic conditions are identical, and maize is the staple article of food. In a family where the members must more or less have inherited the same tendencies, and are subject to similar hygienic and dietetic conditions and to the effects of equally excessive toil, one or two (rarely more) sicken.

The prophylactic and curative measures hitherto adopted, and which were based upon the maize theory, have in truth yielded but little result. The amount of foreign maize (which is considered the most to be feared) imported into Italy has no effect upon the increase or decrease of pellagra. In spite of the *absolute* abolition of this cereal as an article of diet the disease may continue to show itself with progressive symptoms for many consecutive years.

An English commission, with Dr. L. W. Sambon at the head, which has made a special investigation of pellagra also in Italy, has decided that there is no connexion whatever between maize and pellagra, and has put forward the hypothesis that the disease must be attributed to a parasitic protozoon which is probably transmitted and propagated by a species of mosquito (similium) existing in the drinking water.

Professor Giulio Alessandrini, of the University of Rome, is also a decided opponent of the maize theory. By means of a series of studies and diligent observations prosecuted by himself in almost all the pellagra districts of Italy[1] he has, he believes, established that this malady owes its origin to an exactly localised *quid* found in drinking water, and only in such waters as arise in, or traverse, or are stagnant on, argillaceous soil. Professor Alessandrini has been led to this conclusion from the observation of the following facts: (1) The entire absence of pellagra where clear running water is drunk; (2) the presence of the disease where stagnant water is used or that from ditches or wells in the superficial stratum; (3) the gradual, slow disappearance of the disease where drainage operations are gradually and slowly carried out; (4) the rapid disappearance of the malady where aqueducts are made or where many artesian or other deep wells are sunk at the same time, or where the existing bad wells are put into good condition; (5) the obstinate persistence and even progressive increase of the complaint when nothing has been done as regards the drinking water; (6) the restriction of pellagra in those districts where the water is good, to such persons as have, through emigration, contracted the disease where it is unwholesome; (7) the greater and almost exclusive occurrence of pellagra in country districts, especially in those which are the most thickly populated, and where nothing is done to improve the condition of the water used for drinking purposes. In consequence of these new views, and at the instigation of Parliament, the Ministry of the Interior nominated a commission for the purpose of examining and controlling these new theories, in order to ascertain if it was necessary to change or to modify the present Italian legislative measures regarding pellagra. So far, however, this commission has presented no report.

The above-mentioned investigations of Alessandrini having become known, I thought it well in June, 1912, that the Pellagra Commission of the Province of Rome, of which I have the honour to be President, should request Professor Alessandrini (who is a member of the said commission), together with Professor Giannelli and Professor Filena, to make an inquiry in our province for the purpose of ascertaining the condition of the endemic disease of pellagra in Lazio and to investigate the conditions which directly or indirectly have an influence upon the development of the malady according to both the old and new theories. The report,[2] after having established that pellagra in Lazio is only met with in four districts, and in a limited number of persons (35 women and 11 men), states that also among our own people the disease can, and in fact does, exist where maize is not used; further, that in some districts, it is only met with in the centres of population, while it is absent in the country, and that some of the peasants only fall ill when, from the necessity of finding work, they go to certain districts without, however, making any change in their food or conditions of life.

The conclusions reached are the following: In the province of Rome there seems to be no connexion between a maize diet and pellagra; the disease is circumscribed and is always confined to determined localities; there may be some connexion between the drinking water and the malady; there is apparently none between sucking insects and pellagra. The water hypothesis of Alessandrini, although based upon endemic data of indisputable value, needed, however, strict experimental control. Professor Alessandrini himself initiated at the Institute of Hygiene of the University of Rome a few experiments, the results of which being favourable to his theory, encouraged him to continue his researches upon a larger scale.

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[1] La Pellagra in Italia, Osservazione epidemiologiche, Annal d'Igiene sperimentale, Roma, 1910.

[2] Il Policlinico, vol. xx., 1913.

It appeared to me and to the Pellagra Commission of Rome that these preliminary studies and experiments carried out by Professor Alessandrini (with whom was subsequently associated Professor Alberto Scala, who attended to the chemical side of the question) were of great scientific importance. The new views, if widely controlled and confirmed, might definitely solve the questions of the origin and cure of pellagra. Therefore I did not hesitate to propose to our Commission that the necessary means should be placed at the disposal of the two investigators for the extension of their researches and studies and their experiments on animals. The Commission approved of this suggestion.

Already in May, 1913, Alessandrini and Scala gave a verbal report of the latest results of their labours and the conclusions they considered could be drawn from them. Now they have published a detailed monograph, "Contributo nuovo alla Etiologia e Patogenesi della Pellagra,"[3] in which they give an account of their experiments on man and animals and discuss the definite conclusions they have reached.

The statement already made by Alessandrini and mentioned above was confirmed—viz., that pellagra is contracted in definite zones where the usual drinking water comes from springs arising in argillaceous soil or from the streams and stagnant pools in a clayey district.

The new and important point which has just been established is the cause of the disease. This appears to be a chronic poisoning brought about by the silica in colloidal solution in waters of determined composition; in other words, pellagra seems attributable to mineral colloids. According to the authors, the clay is the first cause of the evil, for the rain-water present, either in the superficial or the deep strata of the ground, reacts upon the clay which is a silicate of alumina, producing a hydrolysis that brings about the formation of silicic acid and hydrate of alumina. Both these compounds, from the condition under which the hydrolysis takes place, can pass into the water in the colloidal form. Since, as is well known, there exists an incompatibility between colloidal silica and colloidal alumina, there only remains in the water the amount of silica in excess of that required for the precipitation of the alumina. The colloidal silica-alumina compound, which must on no account be confused with silicate of alumina, goes to form the deposit. Part of it, however, remains in suspension as a very finely divided colloid, and is the cause of the persistent opalescence often observed in the water drunk by sufferers from pellagra. The poisoning by silica would thus resolve itself into a mineral acidosis upon which would depend all the anatomical, pathological, and metabolic alterations which are met with in pellagra patients. Hence arose the other conclusion regarding pellagra—viz., that it is a disease due to the enforced retention of mineral salts followed by a liberation of acids which is excessive in comparison with the amount regarded as normal in the case of any given organism.

It having been proved that the question is one of mineral acidosis, Scala and Alessandrini believed that the toxic effects could be modified by the injection of an alkaline substance such as trisodium citrate. They also considered that the pellagra-inducing water could be corrected and freed from injurious substances by placing small pieces of lime in the pipes and reservoirs.

In the monograph cited above are described numerous experiments in inducing pellagra in monkeys, dogs, guinea-pigs, and rabbits, either by mixing a small quantity of the water from the pellagra zone with the usual food of these animals, or by means of intraperitoneal and subcutaneous injections of colloidal or gelatinous silica, or by introducing the same substances through their mouths. The results have always agreed, both as regards the symptoms and the pathological, macroscopical and microscopical changes. The clinical complex corresponds exactly, or almost exactly, with that of pellagra in the human subject.

The curative treatment was not only applied to animals in which the disease had been induced, but also to human beings who had been suffering from pellagra for longer or shorter periods of time. As it was a question of an absolutely innocuous substance such as trisodium citrate, the experiments could be carried out without hesitation. The results were in the highest degree satisfactory; persons who had been ill for a long time improved and were cured in a relatively short space of time without any change having been made in their mode of life, surroundings, or diet.[4] The Pellagra Commission of Rome wished that these curative experiments should be largely extended both in its own district and in the other provinces of the kingdom where this disease is most prevalent. Further, it has carried out, at its own expense, the correction of the water by means of the introduction of pieces of lime in the commune of Onano (Viterbo), which is the part of Lazio where pellagra has always been persistently endemic. The aqueduct has been completely restored, and all possible sources of contamination have been removed, while a number of minute pieces of calcium (previously well washed) have been introduced into the reservoir and along the channel. This will afford a decided proof of the course to be taken in prophylactic measures against pellagra.

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[3] Tipografia Nazionale Bertero, Rome, 1914, pp. 176 and 8 coloured plates. THE LANCET, Sept. 12th, 1914, p. 713.

[4] The following are the exact words in which the two eminent scientists have recorded their results:

1. Silica in a colloidal condition and in a gelatinous condition produces chronic poisoning in guinea-pigs, rabbits, dogs, and monkeys when administered by means of subcutaneous or intraperitoneal injections, or when introduced into the mouth. 2. The electrolytes with which the silica comes in contact before entering the circulation have a great effect upon its toxic action, for which reason colloidal compounds or compounds of superficial absorption are made which may be more or less harmful than silica alone, or perfectly innocuous, as in the case of carbonate of calcium. 3. The action of alumina is similar to that of silica, at all events on guinea-pigs and rabbits, and thus increases the effect of the former substance, whether it unites with it in the form of a colloid mixture or whether it is merely in suspension in the water and separate from the silica. 4. The water of the pellagra zones of the Gualdo Tadino district (a subdivision of Grello and Morano) containing argillaceous matter in suspension, when mixed with bran and administered through the mouth to guinea-pigs and rabbits and as a drink to monkeys, produces the same silica poisoning. 5. The feeding on maize-flour and grass of animals subjected to the action of silica in no wise increases the toxic action, except in such cases where the maize introduces poisonous silica, or any other injurious substance. 6. The silica is the cause of the retention of the salts and gives rise, first to an excessive fixing of mineral salts in the tissues and later to the excessive liberation of mineral acids which produce the anatomico-pathological lesions already recorded. 7. The effects of this toxic action are counteracted by intramuscular or subcutaneous injections of solutions of neutral citrate of sodium as an alkalising agent. 8. The complex of toxic symptoms produced by the silica in animals is most similar to, if not identical with, that of human pellagra. 9. Human pellagra is an acidosis, as has already been demonstrated, and is proved by the fact that patients suffering from this disease are cured, or their condition is greatly improved, by the use of neutral citrate of sodium; that is to say, they are cured when the malady is of relatively recent date or when the free mineral acids have not caused irremediable lesions, as must occur in toxic action of long standing. 10. In animals rapid poisoning can occur, which, however, introduces no new features. The same is also the case in acute human pellagra.—Contributo Nuovo, cit., pp. 168 et seq.

Let us hope that the results hitherto obtained may be indisputably confirmed. Pellagra would then be vanquished by very simple and inexpensive means.

DIFFERENTIAL DIAGNOSIS BETWEEN ACUTE ABDOMINAL AND CERTAIN ACUTE INTRATHORACIC DISEASES.

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Introduction.

The knowledge that intrathoracic disease may be accompanied by signs of abdominal disease is at least a century old. Thus Laennec in his admirable treatise in 1819 says of pneumonia that though it is unusual for the epigastrium to be painful, yet in those patients who suffer pain in the stomach it is hard to say whether the pain is produced by pressure or from the impediment thereby occasioned to respiration. Andral in 1823 must have seen several such cases, for he states that though in many cases of pleuro-pneumonia "the abdomen is soft and free from pain," there may be (1) hypochondriac pain with nausea and hiccough; (2) pain in the flank and vomiting; (3) sudden pain in the epigastrium; and (4) nausea and vomiting. Louis in 1829 observed pain in the abdomen in a quarter of his cases which died from pneumonia, but he says that pain in the abdomen was only observed in those patients with pneumonia who were suffering from diarrhœa. He observed gastric pain, or vomiting or nausea in 40 out of 82 pneumonic patients. Though Wilson Fox observed that abdominal pain was rarely an initial symptom of pneumonia, the rapid advance of abdominal surgery and the consensus of opinion as to the advantages of early operation have brought this type of case into prominence. Crozer Griffith in 1896 described a case of pneumonia in a child which closely simulated an attack of appendicitis.

In 1902 Maurice Richardson published six cases of pneumonia which were at first diagnosed as cases of appendicitis, and by one of those not uncommon coincidences H. Barnard read a paper on the same subject before the Clinical Society of London on the next day. The latter said that the abdominal signs and symptoms which resulted might be divided into two classes: 1. Parietal, where the abdomen is tender, rigid, associated with painful costal respiration, and spasm of the recti. These signs are generally one-sided, and often in the right or left iliac region. 2. Visceral, where nausea, hiccough, or vomiting is present. The vomiting may be urgent and bilious. Distension may be present. Constipation is usually concomitant. He explains these signs thus: (*a*) That the irritation in continuity of the lower six dorsal nerves may cause abdominal hyperæsthesia and spasm; (*b*) that referred visceral pain explained abdominal pain in those cases of early pneumonia which did not involve the pleura. That visceral impulses passing into the root ganglia of dorsal nerves 7, 8, and 9 exalted their excitability so that impulses from the skin to those ganglia gave rise to painful impressions (Head); and (*c*) visceral signs must be explained by some reversal of the reflex, or by direct involvement of the splanchnic nerves (dorsal 6 to 12) above or below the diaphragm.

On the other hand, C. W. G. Rohrer considers that abdominal pain, especially in children, is often due to inflammation of the diaphragm itself. Pye-Smith and Beddard state that in cases of pneumonia, pain in the side and abdomen is frequently an early sign. "It is due to pleurisy and is therefore absent in deep-seated pneumonias." As stated above, Henry Head believes that the occurrence of abdominal pain in deep-seated pneumonias may be due to referred visceral pain, and I shall quote some cases where as the definite signs of pneumonia were so late in appearing, and there were no signs of pleurisy, the pneumonia must have been deep-seated. Musser and Norris found abdominal pain in only 13 cases out of 1129 cases of pneumonia—that is, in 1·1 per cent. of cases, and vomiting in 192 cases out of 1328 cases of pneumonia—that is, in 14 per cent. of cases. J. W. Chatard observed abdominal pain in 51 cases out of 658 cases of pneumonia—that is, in 7·7 per cent. of cases.

An investigation into the registers for 1910 and 1911 of a metropolitan hospital (the Middlesex) reveals the fact that out of a total of 100 cases of pneumonia 6 cases were admitted into surgical wards as cases of acute abdominal disease. Of these cases, one underwent laparotomy and the others were transferred to medical wards. A case of pleurisy was also admitted into a surgical ward. During this period 4 cases of pericarditis and 1 case of endocarditis were admitted to surgical wards as acute abdominal cases, and of these 5 cases, 4 underwent laparotomy.

Differential Diagnosis.

The most common acute intrathoracic diseases which may simulate acute abdominal diseases are lobar pneumonia, pleurisy, and pericarditis. I propose to deal with these three diseases in this order, and then briefly to enumerate the various abdominal conditions which they may simulate, mentioning any special points in the differential diagnosis, &c., peculiar to each disease.

A. *Lobar Pneumonia.*

In the differential diagnosis of pneumonia careful consideration must be given to the pulse-respiratory quotient, the temperature, the character of the pulse, the presence or absence of herpes, the colour of the face, the feel of the skin, and the examination of the rectum.

The pulse-respiratory quotient.—I have consulted the charts and notes of all cases of pneumonia and of acute abdominal diseases in the registers of the Middlesex Hospital during the years 1910 and 1911. I have rejected all cases which came in later than 48 hours after the onset, and have taken as the standard the pulse, respirations, and temperature as charted four hours after admission, when I hoped that the influence of transport to the hospital would have ceased. In many of the acute abdominal cases I have had to content myself with taking the pulse, respirations, and temperature charted immediately prior to operation. I have taken the average of the totals and noted any cases which differed to any extent from the average.

Summary of Averages of Cases of Pneumonia in 1910 and 1911.

Year.	—	No. of cases.	Pulse.	Respiration.	Quotient.	Temperature.
1910	Children with broncho-pneumonia.	37	134·0	48·0	2·8	102·4°F.
1911	,,	17	136·0	51·0	2·6	102·8°
1910	Children with lobar pneumonia.	19	134·0	48·8	2·7	103·0°
1911	,,	12	127·0	48·2	2·65	103·0°
1910	Adults with pneumonia (lobar).	39	112·0	40·2	2·77	102·8°
1911	,,	30	115·0	41·0	2·8	103·0°

Summary of Averages of Acute Abdominal Cases.

Year.	—	No. of cases.	Pulse.	Respiration.	Quotient.	Temperature.
1910	Children with acute appendicitis.	4	111·6	28·0	3·9	99·8°F.
1911	,,	4	107·0	27·5	3·88	100·3°
1910	Children with appendix abscess.	6	117·0	31·0	3·7	100·6°
1911	,,	8	120·2	27·4	4·3	101·7°
1910	Children with general peritonitis (appendix).	3	114·6	29·0	3·9	101·4°
1911	,,	2	110·0	28·0	3·9	99·8°
1910	Adults with acute appendicitis.	53	100·2	23·3	4·3	100·0°
1911	,,	30	101·0	23·4	4·3	100·5°
1910	Adults with appendix abscess.	30	91·3	23·6	3·86	100·0°
1911	,,	37	102·4	25·0	4·1	100·7°
1910	Adults with general peritonitis (appendix).	15	123·0	27·1	4·5	100·6°
1911	,,	12	112·5	28·0	4·0	101·0°
1910	Adults with general peritonitis.	16	122·0	31·0	3·9	98·5°
1911	,,	13	104·8	28·5	3·7	99·6°

It will be observed from the summaries that the averages were practically the same in each year, and that the average quotient was therefore remarkably constant. On these figures one might formulate this dogma. "In cases where there is doubt as to whether the lungs or the abdominal viscera are responsible for the symptoms, a pulse to respiration quotient of under 3 would decide in favour of the former, and of over 3, of the latter." Unfortunately exceptions are numerous. In the statistics for 1910 and 1911, from which the average was made, there were the following exceptions:—

Children with broncho-pneumonia.—The total number of cases was 54. The number of exceptions was 10, so that exceptions to the above rule equal 18 per cent. The highest pulse to respiration quotient was 5. In 8 cases of these 10 the quotient sank to well under 3 within two days of admission.

Children with lobar pneumonia.—The total number of cases was 31. The exceptions numbered 4, which exceptions to the above rule equal 13 per cent. The highest quotient was 4. In all these cases the quotient became less than 3 within 48 hours.

Adults with pneumonia.—The total number of cases was 69. The exceptions were 18, which exceptions to the above rule equal 26 per cent. One of these exceptions showed as high a quotient as 4. In 14 out of the 18 exceptions the quotient became less than 3 within 48 hours.

If now the quotients of the acute abdominal crises be examined—

Children for 1910 and 1911: The total number of cases was 27, and there was not a case where the quotient was less than 3.

Adults for 1910 and 1911: Total number of cases 206. The number of cases where the quotient was less than 3 was 5, which is equal to an exception of 2·4 per cent. to the statement that the respiratory-pulse quotient in abdominal crises is never less than 3.

It is very interesting to note that every one of these exceptions was a case of general peritonitis. In four cases out of the five the peritonitis was due to perforation of a gastric ulcer, so the probability is that the diaphragmatic peritoneum was involved. The other exception was due to a gangrenous appendix. Two of these cases subsequently developed pneumonia. With the onset of pneumonia the quotient sank from under 3 to 2.

To summarise the results of the investigation of the respiratory-pulse quotient, the quotient in cases of pneumonia is practically always less than 3 within 48 hours, while the quotient in cases of acute abdominal crises is never less than 3 unless the subphrenic peritoneum is infected. Even where this complication has arisen a quotient of less than 3 is exceptional.

Temperature.—On comparing the average temperature of a case of pneumonia with the average temperature of an acute abdominal case a striking difference is seen. In cases of pneumonia of children the average temperature is 102·6°. In acute abdominal cases among children the average temperature is 100·4°. In cases of pneumonia among adults the average temperature is just under 103°. In acute abdominal cases of adults the average temperature is 100·4°. It is very striking that the average temperature of 29 adults admitted with general peritonitis (due in most cases to perforation of stomach or duodenum), was only 99°. Of these general peritonitis cases the highest recorded temperature prior to operation was one of 104° in a case of criminal abortion, while two cases of perforated gastric ulcer admitted two days after perforation had a temperature of 102°. Out of 29 cases of general peritonitis not due to the appendix 10 cases had a subnormal temperature. There was only 1 case of pneumonia with a subnormal temperature, and in that case the temperature had risen from 97·4° to 102° within three hours.

A low respiratory-pulse quotient combined with a high temperature is therefore far more typical of pulmonary disease than of abdominal. Of those cases of pneumonia in children where the pulse-respiratory quotient was over 3, the average temperature was 102·9°, the highest recorded being 105° and the lowest 101°. Of cases of pneumonia in adults with a respiratory-pulse quotient of over 3, the average temperature was 102·8°, the highest being 104·2°, and the lowest 100°. Of the cases of acute abdominal disease where the quotient was less than 3, the average temperature was 100°. The highest was 102° and the lowest 97°.

Pneumonia is not an uncommon complication of acute abdominal diseases, especially with cases of perforations of the stomach or duodenum, and it is interesting to note that with the onset of pneumonia the pulse-respiratory quotient falls and the temperature rises. Conversely, pneumonia may be complicated by suppurative peritonitis. Hector Mackenzie analysed 7868 cases of pneumonia and found that this complication occurred in 22 cases, 17 of which proved fatal. When the diagnosis of pneumonia is established the onset of abdominal symptoms should always arouse suspicion. The early recognition of general peritonitis and the prompt surgical relief may result in the patient's recovery, as it did in one of my cases.

The pulse.—The pulse of pneumonia is increased in rate, but does not usually become very rapid. In an average case, according to Wilson Fox, it is between 90 and 112. Grisolle found that in a quarter of his cases the pulse-rate was less than 100. In my series of cases the average pulse-rate of 31 cases occurring in children with lobar pneumonia was 131. Of these cases, 18 showed a pulse-rate of more than 120, and the highest recorded was 168. Of the 69 cases of lobar pneumonia occurring in adults, the average pulse-rate was 113·5. Eighteen of these cases (or 26·6 per cent.) had a pulse-rate of over 120. The highest pulse-rate recorded was 148, and the lowest was 80.

Comparing these averages with those of acute abdominal diseases the average pulse-rate of 27 children suffering from acute abdominal disease was 115, of which the highest registered was 140 and the lowest 82. Thus both the average pulse-rate and the highest recorded rate in children with acute abdominal disease are lower than in those suffering from pneumonia.

Among the adults the average pulse-rate of 206 cases of acute abdominal disease was 105. Of these cases 98 showed a pulse-rate of over 100—that is, 47 per cent. of cases, and 32 showed a pulse-rate of over 120, which is 16 per cent. of cases. This, I should think, is a low percentage for acute abdominal cases, but as compared with cases of pneumonia in the same series seems to show that the average pulse-rate of pneumonia is higher than that of acute abdominal disease.

Usually the pulse of pneumonia is full and soft for the first few days, but as a rule later becomes smaller and dicrotic. Irregularity is not often found, and James Mackenzie regards irregularity of the pulse in a case of pneumonia before the crisis as a very ominous sign. He has rarely seen a pneumonic adult with a pulse-rate of over 140 recover.

The blood pressure.—As a rule there is but little change in the blood pressure during the first few days, though it may fall 10 to 15 mm. of mercury (Wilson Fox). In severely toxic cases there may be a much greater fall. Where the pressure in millimetres of mercury is less than the pulse-rate the prognosis is grave. The blood pressure is very little affected in most cases of acute appendicitis, but in cases of acute general peritonitis, especially associated with perforated gastric ulcer, and in cases of acute hæmorrhagic pancreatitis the fall in blood pressure is great and rapid.

Cyanosis.—Unless the right side of the heart is failing cyanosis is not often seen with pneumonia (Pye-Smith and Beddard). Cyanosis is seen in severely toxic acute abdominal cases, but in these cases the cyanosis is also due to right-sided heart failure. Acute hæmorrhagic pancreatitis is the one acute abdominal condition frequently characterised by a cyanosis which increases in degree with the increase of the pulse-rate. This cyanosis is not a constant sign, but occurs sufficiently often as to be of diagnostic value. Many authors have drawn attention to this sign, especially Halsted and Moynihan. The cyanosis of acute pancreatitis is sometimes limited to the abdomen, and the face is ashy grey in colour.

Vomiting.—Musser and Norris found vomiting as an early symptom in 14 per cent. of 1328 cases of pneumonia, and as occurring some time during the illness in 27 per cent. of 5047 cases. Schapira found that vomiting was a common initial symptom, especially in children, as it occurred within 12 hours in 57 out of 173 cases of pneumonia which he collected. The vomiting associated with pneumonia is not as a rule persistent, such as is often the case where the peritoneum is involved, or in cases of intestinal obstruction. It may, however, be very persistent, and acute dilatation of the stomach is a well-known complication of pneumonia.

A case of pneumonia which terminated fatally is quoted by Anstie in which vomiting persisted not only during the pyrexial period but for 12 days afterwards, while the temperature remained subnormal. Such a case if associated with constipation may and has given rise to the mistaken diagnosis of intestinal obstruction.

Rigor.—This is a common prodrome of pneumonia. The frequency of occurrence and the intensity are greater in cases of pneumonia than in almost any other disease, with the exceptions of intermittent fever, pyæmia, and puerperal fever. Musser and Norris in an analysis of 9851 cases found it in 5731 cases, or 58 per cent. of cases. Huss observed rigors in 80 per cent. of his cases. Grisolle found it in 145 cases out of 182 cases, and of these it was the initial symptom in 101 cases. Louis found rigors as an initial symptom in 61 out of 79 cases of pneumonia. The rigor usually occurs at the onset, and is rarely repeated. Traube was of the opinion that repeated rigors should cause doubt as to the correctness of the diagnosis. Though occurring in cases of acute abdominal disease, it is not common, except in cases of acute suppuration of the gall-bladder or its associated ducts.

The skin and facies.—With pneumonia the skin is usually harsh and dry, and the cheeks are often flushed. It is not uncommon for one cheek alone to be flushed and that on the same side as the lung affected. In severe abdominal cases, especially where the general peritoneal cavity has been suddenly involved (such as in cases of acute perforation), the skin is often cold and moist. The cheeks are usually pale, and the expression of the patient is pinched and anxious.

Herpes.—This is a common complication of pneumonia. According to Geisler it occurs in 43 per cent. of cases of pneumonia. He analysed 421 of such cases, and found that it occurred in 182 cases. Of these 182 cases, in 1 case it appeared on the first day of the disease, in 18 on the second day, in 66 on the third day, in 41 on the fourth day, in 20 on the fifth and sixth days, and in the remaining 36 after the sixth day. That is to say, that of 421 cases of pneumonia 20 per cent. of cases developed herpes within the first three days of the illness. Riehl analysing 481 cases of pneumonia found that 179 cases developed herpes, 79 per cent. of which appeared between the third and fifth days. Although herpes seldom appears before the third day Aufrecht had a case where vesicles appeared two days before the pneumonia. In my series of acute abdominal diseases no cases of herpes were seen except in such cases as were complicated by pneumonia.

Bowels.—Irregularity of the bowels is not a common feature of pneumonia. McCrae states that in a series of 486 cases of pneumonia the bowels were regular in 57 per cent. of cases, constipation was present in 31 per cent. of cases, and diarrhœa in 12 per cent. of cases. Constipation, when present, may be very marked, and occasionally when such a case is also complicated with abdominal pain and vomiting, the diagnosis of intestinal obstruction is made. In acute cases of abdominal disease irregularity of the bowels is the rule rather than the exception, especially in cases of acute appendicitis, where constipation is more common than diarrhœa. In an analysis of 123 cases of acute appendicitis I found constipation in 81 cases, the bowels were regular in 30 cases, and diarrhœa was present in 12 cases.

Urine.—In cases of pneumonia the urine is usually diminished in quantity and increased in specific gravity. This increase in specific gravity may reach to 1035 when sugar is entirely absent (Lebert). Slight albuminuria is a more frequent complication of pneumonia than of almost any other acute disease. Thus, in a series of 67 cases analysed by Parkes albuminuria occurred in 30 cases. The excretion of chlorides is usually much diminished. Musser and Norris, analysing the statistics of Ashton, Landis, Musser, McCrae, Fyshe, Hadden, H. Mackenzie, and Ord, find that in some 450 cases the excretion of chlorides is normal in 19 per cent., diminished in 53 per cent., and absent in 28 per cent. of cases. According to Salkowski this hypochloruria is not merely the result of decreased consumption of salted food, but is a true retention of chlorides in the body. This hypochloruria is even found in those cases which are being given sodium chloride by the mouth (Beale).

In cases of acute abdominal diseases there is frequently diminished secretion of urine and increase of specific gravity, associated with the restricted fluid intake, vomiting, and fever, but albuminuria is rare except in very toxic cases. In such abdominal cases as involve the pelvic peritoneum pain on micturition, especially at the completion of the act, is a frequent and valuable sign.

Rectal examination.—Examination per rectum or per vaginam should never be neglected in doubtful cases, as by this method valuable knowledge of the condition of the pelvic peritoneum can be gained. Of all cases of pneumonia where this examination was made only one exhibited tenderness, which was on the same side as the lesion in the lung, but there was no swelling or bogginess to be felt.

B. *Pleurisy.*

Until the development of local signs of pleurisy the difficulty of excluding acute abdominal disease is greater than is the case with pneumonia. When local signs of friction or of collection of fluid can be found then the diagnosis is confirmed, but it is important to determine early whether the pleura or peritoneum is involved. The dry diaphragmatic pleurisy is most likely to give rise to the suspicion of acute abdominal disease. In such cases abdominal respiration is lost, and the rectus on the affected side may be as rigid as a board. Musser and Norris found abdominal pain in 5 out of 82 cases of primary fibrinous pleurisy, in 5 out of 374 cases of serofibrinous pleurisy, and in 2 out of 23 cases of primary purulent pleurisy—that is, 2·1 per cent. of 479 cases of pleurisy.

I may now briefly consider some of the signs and symptoms on lines similar to those already pursued in the discussion of pneumonia.

1. *The pulse-respiratory quotient.*—This is frequently lowered, but the perversion of the quotient is not nearly so striking as in cases of pneumonia. W. H. Walshe states that in a case of pure pleurisy he has never met with a lower quotient than 2·7. In one case of pleurisy which simulated appendicitis on admission the pulse was 136 and the respiration 52, a quotient of 2·6. On the next day the pulse was 112 and respirations 48, a quotient of 2·3.

That the perversion of the quotient is not as great as that of pneumonia is probably due to the fact that the cause of the dyspnœa is pain rather than toxæmia or pressure; indeed, it is remarkable how large a collection of fluid can accumulate *slowly* within the pleural cavity without increasing the respirations to any extent.

2. *The temperature.*—The onset of pleurisy is often marked by pyrexia, which may be considerable; indeed, Wilson Fox considers that *slight* pyrexia is the exception rather than the rule. The pyrexia is, however, usually of less degree than that of pneumonia. The average temperature of acute abdominal conditions has already been discussed, so I will only note that it is nearer that of a simple pleurisy than that of pneumonia.

The pulse.—The rate is usually increased, but is not as a rule very high, seldom being over 100 (Wilson Fox). Only a quarter of the cases collected by Woillez showed a pulse-rate of over 100, and in only 4 out of 182 cases of pleurisy did the pulse-rate range between 120–130. The case referred to is therefore exceptional in presenting a pulse-rate of 136. Referring to the statistics of my series of acute abdominal cases when comparing the average pulse-rate with that of cases of pneumonia, among adults 47 per cent. of cases showed a pulse-rate of over 100, which is twice the percentage that Woillez found in his series of cases of pleurisy.

Vomiting.—This is not uncommon in cases of pleurisy occurring among adults, but according to Barthez and Rilliet it occurs during the invasion in over 50 per cent. of cases among children. As in cases of pneumonia, the vomiting is neither so persistent nor severe as that associated with acute abdominal disease.

Rigor.—The onset of pleurisy is frequently accompanied by a rigor, but the rigor occurs less frequently, and is less severe or protracted than that associated with pneumonia. I have already discussed the occurrence of rigor in acute abdominal disease.

C. *Pericarditis.*

With regard to the differential diagnosis between pericarditis and acute abdominal diseases, great difficulty may be experienced, as is evidenced by the fact that 3 out of 4 cases of pericarditis admitted as cases of appendicitis underwent laparotomy. The difficulty is increased by the fact that in such cases of this nature as I have analysed the abdominal symptoms preceded the development of physical signs of pericarditis by many days. On what signs, therefore, is an early differential diagnosis to be made?

The history.—A previous history of pains in joints, limbs, or of a sore-throat should always arouse suspicion that the alleged case of appendicitis may really be a case of pain referred to the region of the appendix. I have not yet seen a case of uncomplicated acute abdominal disease where the onset was marked by pains in joints or limbs.

The pulse-respiratory quotient.—This is of little assistance as it is not generally low, but is similar to that associated with acute appendicitis and other abdominal conditions. The temperature also is of little help, as a moderate pyrexia is the rule rather than the exception.

Summary of the Average Pulse, Respiration, and Temperature of 30 Cases of Acute Pericarditis in the Early Stage.

Adult males.—Number of cases, 12. Average temperature, 100°. Pulse, 114. Respirations, 27·2. Quotient, 4·2.

Adult females.—Number of cases, 11. Average temperature, 100°. Pulse, 109. Respirations, 28·3. Quotient, 3·8.

Total adult cases.—Number of cases, 23. Average temperature, 100°. Pulse, 110·8. Respirations, 27·8. Quotient, 4.

Children.—Number of cases, 7. Average temperature, 99·7°. Pulse, 114. Respirations, 30. Quotient, 3·8.

Among adults the lowest quotient was 2·8, and the highest temperature 102°. Among children the lowest quotient was 2·6, and the highest temperature 101·2°.

Vomiting.—This condition is sometimes associated with pericarditis and may be very persistent. James Mackenzie, however, states that he has "never seen vomiting arise as a reflex in heart affections, nor, for that matter, from a lung affection."

The condition of the abdomen.—In those cases of pericarditis which closely simulate abdominal crises cessation of abdominal respiration is common, with associated rigidity of the recti and tenderness. In many cases, however, of pericarditis there is reversed abdominal respiration—that is to say, that the abdomen sinks on inspiration. This is due to paralysis of the diaphragm. Wynter states that "though in the majority of thoracic cases affecting the lung and pleura this is one-sided, and the influence on abdominal movement is proportionately less marked, in acute pericarditis the cessation of phrenic action is bilateral, and consequently absence of abdominal movement is as obvious as in abdominal disorders, though rigidity and general tenderness are for the most part lacking." He further states that in two years he has met with 30 cases of pericarditis in which loss of abdominal respiratory movement led to the detection of pericarditis—a number so much in excess of those usually noted that it at once demonstrates the value of such a sign in assisting to recognise a very obscure condition, and suggests that numbers of instances of pericarditis have hitherto been overlooked.

In the analysis of 30 cases of pericarditis the result was: Among adults the local signs were preceded by cessation or diminution of abdominal respiration in 20 out of 23 cases. Abdominal pain and tenderness were noted in 4 of these cases. Among children local signs were preceded by alteration of abdominal respiration in 4 out of 7 cases, and one of these cases experienced abdominal pain and tenderness.

The Acute Abdominal Conditions which may be Simulated.

Acute intrathoracic disease may simulate practically any acute abdominal condition. I will briefly mention such conditions which I have found among my cases and literature. Pneumonia can simulate (1) perforated gastric ulcer; (2) appendicitis; (3) cholecystitis; (4) gastro-enteritis; (5) hæmorrhagic pancreatitis, as in the case quoted by Sir William Osler, on which Halsted performed laparotomy; and (6) intestinal obstruction. Pleurisy is most likely to simulate acute appendicitis when the right pleura is involved. Pericarditis may simulate: (1) Appendicitis; (2) perforated gastric ulcer; (3) acute hæmorrhagic pancreatitis; and (4) duodenal ulcer.

I may now mention some signs which are found associated with these various abdominal conditions, and which if found would confirm the diagnosis.

1. *Perforated gastric ulcer.*—Signs of free gas in the peritoneum. If found, this is a positive sign of perforation of a hollow viscus. Great care must be taken to be certain that the gas is free, as mere diminution of liver dulness may be due to a distended stomach or colon. Absence of this sign does not exclude the diagnosis of perforated gastric ulcer. There are other points in the history, the condition of the patient, &c., which have been already mentioned, but which are inconclusive.

2. *Acute appendicitis.*—A definite swelling in the right iliac fossa, especially if this swelling is confirmed on rectal examination, will render the diagnosis likely to be accurate. A cæcum distended by fæces may prove misleading.

3. *Acute cholecystitis.*—If the presence of a large tender gall-bladder can be determined then there will be little doubt as to the diagnosis, but it is not always easy to demonstrate this when the abdominal wall is rigid and when hyperæsthesia exists.

4. *Hæmorrhagic pancreatitis.*—The acute onset of great epigastric pain associated with extreme collapse, cyanosis of the abdomen and perhaps of the face, if occurring in a stout and middle-aged patient, should arouse suspicion as to the possibility of the pancreas being at fault. The only sign which will render the diagnosis almost certain is a swelling in the region of the pancreas, which may present between the stomach and the transverse colon, below the colon or above the stomach. It is usually impossible to find this, even when present, owing to the exquisite tenderness of the upper part of the abdomen and the rigidity of the muscles.

5. *Acute intestinal obstruction.*—Constipation, if absolute (that is to say, if neither flatus nor fæces are passed after the use of enemata), is certainly never due to intrathoracic disease. The commonest cause of *acute* intestinal obstruction in an adult is strangulation of a hernia. Thus in 1912 the total number of cases of acute intestinal obstruction (including intussusception) admitted into three metropolitan hospitals was 193, of which 122 cases were of strangulated hernia. In cases of suspected obstruction the hernial orifices (normal and abnormal) should be examined, as frequently the patient is unaware of the fact that he is ruptured until the hernia becomes strangulated, and is thus discovered.

One condition which, as mentioned earlier in this thesis, sometimes complicates pneumonia and resembles intestinal obstruction in the abdominal distension is acute dilatation of the stomach. Of 44 cases of acute dilatation of the stomach collected by Campbell Thomson 3 cases occurred as a complication of pneumonia. When this complication ensues constipation is not absolute, and the abdominal distension can be shown to be limited to the stomach. Moreover, immediate relief can be given by lavage of the stomach, although recurrence of the condition is not unlikely to ensue.

Conclusions.

Severe abdominal pain, often accompanied by vomiting, rigidity of the muscles, and even localised tenderness, may exist without any lesion of an abdominal viscus. When possible it is advisable, therefore, to examine the thoracic viscera before submitting a patient to laparotomy. A thorough examination is frequently impossible owing to the condition of the patient, but in all cases the pulse-respiratory quotient can be analysed and considered with the temperature. I consider this quotient to be of the utmost value, and if attention be paid to it I do not think many cases of pneumonia will be treated by abdominal section. With regard to pleurisy and pericarditis, reliance cannot be placed on either the quotient or the temperature, and as in the past so in the future will mistakes occasionally occur. In all very acute abdominal cases, where the general peritoneal cavity is involved, tenderness is usually elicited on rectal examination and actual swelling is often found; a rectal examination should therefore be made in all suspected acute abdominal conditions. In doubtful cases the history of the onset should be considered, as pericarditis is usually preceded by tonsillitis or pains in one or more joints.

The treatment of cases where doubt exists as to the diagnosis.—When the abdominal signs are so serious that one concludes that if the disease is abdominal the condition is so severe that surgical procedure offers the only hope, then I believe that laparotomy should be performed. Against this view is the fact that if the case is due to pneumonia then harm must be done to the patient by the operation, for apart from shock, the inhalation of ether must have a prejudicial effect on the already congested lungs, and chloroform must still further embarrass a heart enfeebled by toxæmia. In a case presenting such a dilemma the safest procedure would be to perform the operation under local anæsthesia. I have seen this method adopted in the case of a child suffering from lobar pneumonia and general peritonitis. The child stood the operation well, though the disease subsequently proved fatal.

In my series of cases of pneumonia only one underwent laparotomy under a general anæsthetic. The anæsthesia was induced by chloroform and maintained by open ether. The patient died four days after the operation. In Richardson's series of cases one case, a boy aged 6, was treated by laparotomy on the fifth day of the illness. There is no note of the anæsthetic used. The pneumonia was unilateral. This patient recovered. Of Barnard's cases one, a girl aged 17, underwent laparotomy on the second day of the disease. The anæsthetic used was ether. The pneumonia was bilateral, and the patient died on the fifth day of the disease. Therefore, of the 3 pneumonic patients on whom laparotomy was performed, 2 died and 1 recovered. To what extent the operation contributed to a fatal result it is impossible to say, but both were severe cases, and both survived operation for four days, dying on the fifth day of the disease. Musser and Norris state that the fifth, sixth, seventh, and eighth days of disease show the highest mortality.

Acute general peritonitis due to a perforated viscus or a gangrenous appendix, if untreated by the surgeon, almost invariably causes the death of the patient. "Excluding the favourable influence of operative interference, it may be said that no case of diffuse peritonitis due to perforation can be expected to recover spontaneously" (Allchin). Laparotomy does not seem to prejudice the chances of the patient's recovery in cases of pleurisy or pericarditis, as of the five cases I have collected the patients all recovered. Though in each of these cases an error of judgment had occurred, the error lay in the diagnosis rather than in the treatment, for if the diagnosis had been correct surgical interference was the correct treatment, and I consider that under the circumstances the best was done for the patient's good. In all cases the diagnosis is the difficulty; the treatment depends on the diagnosis. In all serious cases where, though there is doubt whether the thorax or the abdomen is at fault, the latter is considered as the probable site of disease, then I think it is to the patient's interest to decide the diagnosis by laparotomy rather than to risk making the diagnosis on the post-mortem table.

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SOME OBSERVATIONS ON 376 CASES OF "FROST-BITE."

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Three hundred and seventy-six soldiers have been admitted to the British Red Cross Hospital, Netley, suffering from so-called "frost-bite." 100 consecutive cases were examined and certain questions were asked of each man. The following particulars have been compiled from their answers. 1. It was freezing at the time of the "frost-bite" in 65 out of 100 cases. 2. Every man was wearing short boots with more than one pair of socks. The majority were wearing puttees. 3. Change of colour in the feet, red-blue, blue, or black, was noticed by the patient in 58 per cent. of the cases. Among these men it had been freezing in 40 cases. 4. In the remaining 42 per cent. the feet were said to be pale. Among these men it had been freezing in 25 cases. 5. In the 58 "coloured" cases the first symptom was numbness or "dead feeling" in 37, pain in 14, and painful swelling in 7. 6. In the 42 "pale" cases the first symptom was numbness in 23, pain in 9, and swelling in 10. 7. In all cases the men had been standing in mud or mud and water of a depth varying from 18 inches to 3½ feet for many hours.

It is difficult in many cases to be certain which is the first symptom, for when a patient arrives at a base hospital some days have already elapsed since he reported sick, and he has to rely upon his memory. But in both "purple" and "pale" cases numbness and "dead feeling" are given in a large majority of cases as the first symptom.

It is clear that it is not necessary for the temperature to be below freezing-point for the production of "frost-bite." Further, there is an almost equal proportion of "purple" and "pale" cases in which it was not freezing. It would seem that the "pale" and purple cases are produced by the same factors, and may be regarded as different varieties of the same condition; and it may be noted that in a few cases one foot was pale and the other discoloured, though it is usual for both feet to be similarly affected.

Physical Examination.

1. *General.*—The appearance of the feet differs in many respects. As already said, the feet may be "pale" or "purple." Further, in some of the "purple" feet there may be blisters containing dark and usually offensive fluid and ulceration of varying depth. The "pale" feet are of a creamy-white colour, and the skin is dry and inelastic. The foot radiates heat to a distance of two or three inches, the radiation being easily perceptible by the hand. These feet have been said by some observers to present no abnormal appearance, but the characteristic colour and the radiation of heat are definite variations from the normal. Further, the subjective symptoms of pain and tingling are most prominent symptoms in the "pale" feet, with the result that the patient becomes a nervous wreck from want of sleep. In the "purple" feet the discolouration is usually deep purple; it is most evident on the ball of the great toe and at the bases of the other toes. The discoloured area is anæsthetic, but at its margins sensation may be acute. Blisters are most common on the dorsal surface of the toes and foot. Ulceration may follow the blisters or occur independently, and may affect the skin and subcutaneous tissues only, or go down to bone. In the "purple" feet the subjective symptoms are not so severe as in the "pale" feet.

2. *Nervous changes.*—(*a*) Normal sensation was never present in the whole of a "frost-bitten" foot.

(*b*) Anæsthesia was present in many cases. In some the toes only were anæsthetic, a phenomenon most evident in toes that were becoming mummified. In these cases the dorsum of the foot was often very tender. In other cases there was anæsthesia of a sock or stocking area. In several of these cases it was possible to show that there was a larger area of anæsthesia for light touch than for pin-prick. In others it was not possible to get satisfactory answers. In a few cases there was definite anæsthesia of a peripheral type over the region of a particular nerve. The external cutaneous and the peroneal nerves are examples.

(*c*) Hyperæsthesia was present in very many cases either by itself or in a foot which was partly anæsthetic. It was impossible to make out any anatomical distribution of hyperæsthesia, but its severity was remarkable. Such stimuli as cotton-wool and a current of air would be resented by the patient in the most severe cases. Such cases were invariably of the "pale" variety.

(*d*) *Motor changes.*—The individual toes could not be moved or could be moved only with difficulty. The great toe in the majority of cases was held in the position of dorsiflexion.

Treatment.

General.—The chief objects of treatment were to relieve the pain and to secure sleep. Various drugs have been tried—e.g., aspirin, phenacetin, trional, &c. But they were found uncertain in their action, and the most severe cases were given a hypodermic injection of morphia. Many of these patients felt thoroughly ill from the effects of exhaustion and exposure and required good nursing, good food, and plenty of sleep. They seem particularly open to attack by the organisms of influenza and enteric fever.

Local.—1. *Warmth* was useful in a few cases only. If the feet are anæsthetic warmth apparently does good, and again when the feet are nearly well. Bed-socks, cotton-wool covers, or hot bottles will supply sufficient warmth. Radiant heat from electric lamps was tried with good results in a few cases.

2. *Cold* is necessary in the majority of cases. The atmospheric air at this time of the year is cool enough to be soothing to the patient. The usual plan was to leave the feet uncovered and guarded by a bed-cradle. A sheet could be placed over the cradle to cut off draughts.

3. *Position.*—The feet were more comfortable if raised on pillows, and by this means any œdema would be made to disappear.

4. *Massage* was beneficial in the majority of cases. At first it has to be very light, but later more vigorous massage with passive movements was tried. The massage can be dry or with some lubricant.

5. *Applications.*—Various oils were tried with equally good results—e.g., eucalyptus oil, methyl salicylate oil, and a mixture of castor oil, glycerine, and atropine. In the cases of blisters and ulceration dry dressing was employed, some powder such as boric acid or one of the bismuth compounds being used.

Results.

The results have been good, but there is no guide as to the duration of symptoms. It is the custom to send the patient on furlough when he can walk comfortably in boots. Œdema of the feet after walking takes a long time to disappear.

Complications.

Tetanus has occurred in two cases of ulcerated "frost-bite." Both patients have survived. Dry gangrene of toes or part of the foot was fairly common. The dead tissue separated after a line of demarcation had been formed. Sometimes superficial tissues only are affected, and a granulating surface is left. Wet gangrene occurred in one patient, an Indian; amputation was necessary in this case. Thrombosis of the saphenous vein, with a high temperature and rigors, occurred in one case. It is worthy of note that seven patients who had been in hospital in France for a week with "frost-bite" developed enteric fever a few days after their arrival at this hospital. Many have been victims of the "influenza" epidemic.

Causation.

The causation is necessarily a matter for speculation. Certain factors are doubtless of importance. The lowered temperature, not necessarily to freezing-point, is probably of great importance, but in my opinion the immobility of the feet and legs is even more important. The feet are cramped in boots that are made too tight by the extra socks worn; the legs may be kept stiff by badly applied puttees, and the whole limb is held motionless by the inertia of the mud and water of the trenches. The combination of the two factors, cold and immobility, will destroy the vitality of all the tissues of the part — nerves, blood-vessels, lymphatics, muscles, and skin. The lessened vitality will cause loss of function in these tissues, with venous stasis, impaired nerve conduction, and disordered vaso-motor functions.

Prevention would necessarily be difficult. If a soldier in the trenches wore large waterproof boots in which he could move his toes and leg muscles he might escape "frost-bite," but his activity would be impaired.

In conclusion, I wish to express my opinion that it is incorrect to regard one group of these cases as "neurotic" or "functional." From the cases I have seen I must believe that there is no difference between the forms of so-called "frost-bite" as regards causation. The differences are in the effects on different individuals, and they are merely different manifestations of the same condition. The definite physical characteristics of these "pale" feet which have been diagnosed as "functional" by certain observers are not such as are found in "functional" disorders. It can be admitted that these patients are in a condition of nervous exhaustion, but their previous hardships, to which are added pain and loss of sleep from pain, are sufficient causes for their appearance. Further, the different effects of "frost-bite" may be seen in the same individual and even in the same foot. Whatever else may be discovered about this condition, I personally am satisfied that it is primarily physical and only secondarily psychical.

British Red Cross Hospital, Netley.

A NOTE ON "FROST-BITE."

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"FROST-BITE," so called, as it has affected the health of the troops in France, is not only of extreme military importance, but is also interesting from the point of view of treatment, preventive and curative. Out of 160 patients admitted to hospital one evening about 120 were cases of frost-bite alone, and many of them were stretcher cases. These were very bad cases in which both feet were affected, and so painful and tender that no walking could be attempted, even with the aid of a stick. This is the largest proportion I have seen admitted to hospital in any one day for over two months, but fortunately, although some were so serious as to be incapacitated completely for the time being, they would for the most part recover, unlike many of those previously admitted, for whom amputation was often necessary.

Causation.

There seemed to be no selective racial incidence of the disease. Hill men, such as the Gurkhas, suffered equally with the Sikhs and those from warmer parts of India. Indeed, so far as I could gather from the other hospitals in Boulogne, the Indian troops withstood the rigours of a winter in Northern France no worse than did the European soldiers.

A low degree of temperature is the primary etiological factor in classical frost-bite. This, however, was not the chief determinant in France, where the cold at the time was not very severe, although generally the weather conditions were extremely bad. The feet alone suffered. I failed to see any case amongst the Indians of chilblains or chapped hands. The condition of the feet was brought about by the accumulation of contributory causes, all tending to produce in greater or lesser degree circulatory stasis. These were cold, wet, fatigue, the wearing of tight boots and puttees, and prolonged standing, conditions difficult to preclude in trench warfare in winter time, when soldiers have to stand for many hours over ankle-deep in mud and slush. In regard to boots a vicious circle develops. The wet leather shrinks and presses on the feet, thereby setting up traumatic inflammation and swelling, which swelling in turn increases the pressure from the boots. I think that in most cases ill-fitting and too-tight boots are direct predisposing causes, though these are aggravated and brought into play by constant cold and wet. "Boot-bite" and not frost-bite might be a more correct term. The number of cases showing definite pressure lesions in places usually caused by boots—viz., the prominences of the toes, the inner side of the hallux and heel—was very great. In many of the cases a considerable degree of septic infection was manifest, which is not surprising considering the general lack of care which was often taken in regard to personal hygiene. In fact, it was this seriousness of infection which chiefly determined the gravity of the case.

Symptoms.

Though not easy to ascertain the exact pathological conditions present in frost-bite, few amputations being performed in the early stages, unless serious sepsis or moist gangrene supervenes, yet on the whole the impression one gathers is that of a low-grade inflammation, secondary to vascular changes, affecting not only the skin and superficial tissues, but also the deeper structures, such as muscles, tendons, joints, and bones. Many of the patients complained of pain in the bones and muscles long after all other signs and symptoms had disappeared. I had to amputate in two cases only. In one septic moist gangrene had developed in one foot, and in the other case emphysematous gangrene. When, naked-eye, the parts were examined after amputation, there was found to be an excess of fluid in the cellular tissues, tendon sheaths, and ankle-joint. The subcutaneous fat was yellower than usual, the muscles pale and flabby, and many patches of subcutaneous hæmorrhage were scattered about. The skin in places was obviously necrosed, and often the necrosis extended down to the tendon sheaths. The epidermis was soft and succulent, and could easily be rubbed off.

Clinically many different types of these frost-bitten feet may be recognised, according to the stage at which they are first seen, but in a broad classification may be arranged as follows:—(1) Pain; (2) swelling; and (3) gangrene. This is in accordance with the predominating sign or symptom. The number of cases with pain alone, however, were remarkably few. As a rule pain and swelling were both present. Of the varieties of gangrene—dry, moist, local, and spreading—the commonest obtaining was a dry, local gangrene. Dry gangrene was sometimes associated with swelling, but as often without.

In general appearance the feet showed marked variation. Some were extremely swollen and œdematous, with tense, shiny skins. In others there was little if any swelling, but in patches the skin was blanched and crinkled or stretched. When much swelling was present careful inspection revealed increased vascularity of the skin, which could be rendered much more evident, however, by using gentle pressure with the finger, thus effacing the superficial circulation, and noting the different effect from that produced thereby in a normal area of skin elsewhere. The redness of inflammation was always difficult to detect in the Indian skin by inspection alone.

The skin was generally of a dark, purple-blue colour, more intense on the dorsum than on the sole, which, except in very pronounced cases, seldom showed any marked change. Peripherally this dark colour shaded insensibly into the normal dark colour of the skin. In the average case a definite colour line of demarcation was seldom seen. Blebs frequently formed on the dorsum of the foot. They were subcuticular and often multilocular. Usually more than one were present. They contained dark, blood-stained fluid; seldom pus even when elsewhere the foot was obviously infected. The skin on the prominences of the toes might be dry and shrivelled and quite hard. On the inner side of the big toe and heel a circumscribed, dry, gangrenous patch was not frequently the only lesion, unaccompanied by general swelling of the foot. The appearance was that of a large dry scab which took some time to slough off, leaving, when it did, a raw granulating surface which healed slowly. In some cases the swelling and œdema were very marked, and involved not only the foot but extended up the leg to the knee. The swelling was most tense over the foot, which was very painful, especially when the plantar fascia was stretched. Pitting on pressure was not characteristic of the œdema; it occurred principally on the leg.

Pain and numbness were the chief symptoms complained of. The former was never very severe, and seldom required alleviation by drugs. Generally local, it was occasionally of a neuritic type, shooting up the leg to the knee, and in one case even as far as the hip. The pain was tingling, pricking, and very persistent, being present for a long time after all signs had disappeared. Occasionally, when the feet were numb, a neuritic pain extended from the feet upwards. No anatomical nerve area was affected, sensory changes being either diffuse over the whole foot or occurring in patches. The calf muscles at times were very painful.

To touch the skin of the feet seldom felt cold, and not infrequently the only sign of lowered vitality was irresilience of the tissues. A diminished elasticity could be demonstrated in almost every case, and was a constant precursor of gangrene. It was always present beyond the edge of a definitely gangrenous patch.

Tenderness was a well-recognised feature. Gentle palpation could generally be carried out with comparative ease, but anything resembling rough handling or firm pressure was sincerely resented. It was a deep tenderness involving muscles and tendons rather than the skin and subcutaneous tissues. If the feet were at all bad the muscles of the calf were in most cases extremely tender. This tenderness had little relation to pain and swelling; it was present when these were absent, and was most marked when all three were present.

Many of the cases ran a temperature from 99° to 100° F. These latter were bad cases of sepsis and emphysematous gangrene, and fortunately were comparatively few. In these cases the odour from the feet was most offensive, and the patients showed marked signs of toxæmia. Very seldom were both feet equally bad, though some of the cases sent to England looked as though they might require amputations at a later date—probably a Syme on one foot and a Lisfranc on the other.

Two Cases of Amputation.

Early amputation was never resorted to unless rendered urgent by the extreme toxic condition of the patient, and fear of spreading infection. The way doubtful cases cleared up under treatment was astonishing; and it was very gratifying to see how cases which on admission seemed so hopeless as to make conservative treatment appear futile, recover to such an extent that the resulting deformity consisted merely in the loss of a toe or toes. In the two following cases, however, prompt radical treatment became necessary early.

CASE 1. *Bilateral frost-bite.*—Patient had been engaged in digging trenches, but did not sleep nor stand about in them. There was no frost at the time. After five days the feet became painful and swollen, and he was treated at a front hospital for a week when, no improvement having taken place, he was sent down to the base. The right foot was a livid, purplish blue, very swollen and œdematous, with blebs on the dorsum. The œdema extended up the leg, pitted on pressure, and gave a slight crackling sensation on palpation. The leg was very painful. Temperature 102° F. The foot was powdered, swathed in a voluminous dressing of cotton-wool, and raised on pillows. The œdema of the leg subsided, no further crackling could be obtained, but the stench from the foot was much more overpowering, and the temperature rose to 103°. A week after admission I performed a Farabœuf's amputation below the knee, and left in a wide drainage-tube. Two days later, as the temperature had not fallen, and a few bubbles of gas appeared in the wound, I removed all the stitches and treated the stump as an open wound with hydrogen peroxide 10 volumes and carbolic acid 1 in 40. Next day the temperature fell to 100°, and by the end of a week the stump was clean and healing. The patient's general condition, very bad before the operation, improved rapidly as a result of the amputation. The left foot had only dry gangrene of the toes and anterior tarsus.

CASE 2. *Bilateral gangrene.*—Left foot was dry with only the toes affected. The right was moist and stinking. Œdema not very marked. Temperature 102° F. A line of demarcation had formed above the ankle. I performed a Farabœuf's amputation below the knee, and the stump healed well by first intention.

General Remarks on Treatment.

The subject of treatment is a wide one, and will be considered in its three phases—preventive, active, and convalescent. As in the case of a good many other complaints, preventive treatment is the most difficult to carry out. There is little doubt that if the men were able to observe the rules of ordinary cleanliness and to change their wet boots and shoes regularly few cases of frost-bite would be recorded. Necessarily recourse must be had to other means. Some of these, however good in theory and at other times, are fanciful and impracticable in an emergency. I discussed this with a traveller whom I met in Boulogne, who had had considerable winter experience for many years in North-West Canada. I was informed that there, amongst seasoned travellers and backwoodsmen, a case of frost-bite hardly ever occurred, no matter how cold and wet the weather; and he suggested that it might well repay the Government to include in the army some North-West Canadians, whose sole duty it would be to attend to the welfare of the soldiers' feet. He recommended that several pairs of moccasins should be worn over one or two pairs of thick woollen stockings. The moccasins, made of skin, are light, watertight, and roomy. They will withstand any amount of hard wear on soft, wet ground, and would be admirably adapted for use in the mud and slush of the trenches. The outer pair or pairs could be removed and dried when the occasion offered; the innermost pair never become wet. Moccasins, however, could not be used for marching purposes, as they wear out on hard ground, and the manner of walking in moccasins is quite different from that in boots. Moreover, this scheme is impracticable, for neither, when the need is urgent, could the requisite number be obtained in the desired time nor the troops taught how to use them properly. The wholesale adoption of rubber boots, which would be equally beneficial, is also impracticable. A remedy exists, however, in improving the foot-gear commonly employed. The boots worn are too small, ill-shapen, and the leather of the uppers too hard and unyielding. The boots need to be at least two sizes too large to allow for the comfortable wearing of two pairs of socks and the swelling of the feet which prolonged standing is apt to entail. Moreover, boots shrink at least one in size when constantly wet and soaked in water. I hardly ever saw an Indian patient with comfortably fitting, roomy boots. They could seldom be laced up properly and frequently would only fit in the absence of socks. I saw many cases come into hospital with the heel-part of the uppers crushed down and only the anterior part of the foot in the boot. There was no room for the whole foot.

In the active stage treatment will necessarily vary considerably according to the condition present. The milder cases, showing little, if any, organic change, but much incapacitation from pain and tenderness, should, like the more serious ones, be given absolute rest in bed. The feet should be well powdered, and covered with a voluminous dressing of cotton-wool. Too often patients were admitted with a scrappy little dressing inadequately bandaged on. The wool should be four or five layers deep, loosely and thoroughly envelop the whole foot, and extend well up the leg beyond the area of pain and tenderness. The bandage should be very lightly applied, yet firm enough to retain the dressing in its place. Thermogen wool, if available, is the best to use, for it possesses greater heating properties than the ordinary unmedicated wool, but being more expensive it is limited in general use. The dressing need not be changed frequently, but may be left on for four or five days. When pain and tenderness are no longer acute, much benefit may be derived from gentle massage and exercise. Massage, generally with oil, had a decided influence in the relief of pain; and in conjunction with movements—active and passive—in shortening the period of convalescence. At first massage should be confined to light, gentle stroking, becoming brisker as the condition of the feet improves, until ultimately resembling the vigorous rubbing of the popular, homely masseur. Movements of the different muscles and joints were carried out at first in bed, at frequent intervals throughout the day, but as soon as the patient's state allowed he was put on discontinuous walking and tip-toe exercises, resting in bed in between time. Hot-water bottles and fire have to be avoided as a means of improving the circulation, warmth can always be obtained by cotton wool and friction. Apart from the danger in exciting a general gangrene when frost-bitten feet are placed too near the fire, due to a sudden increase of fluid in the tissues consequent on a too rapid thawing, seeing that sensation in many of the cases is numb or absent, a serious burn might easily be inflicted. This was ever to be guarded against at the Indian Hospital, for when left to themselves the patients were apt to get out of bed and squat on the floor, with their feet resting against the stove in the centre of the ward.

In the presence of broken skin or the feet assuming a moist condition, after a preliminary painting of the skin with tincture of iodine 3 per cent. in methylated spirit, the limbs, well covered with cyanide gauze and cotton-wool, were raised on pillows three or four deep. This was preferable to slinging them from a cradle, for not only was more support thereby given, but the patients complained much less of pain. No matter how well the limb was padded, complaint was invariably made of pain at the level of the sling, and the œdema took a much longer time to subside. Often the painting with iodine was repeated, and this process, in addition to alleviating pain, acted as an antiseptic and dehydrant.

In consequence of this treatment a large majority of the cases which were on the borderland between dry and moist gangrene ultimately settled down and became resolved into the former and much more hopeful variety. The dusting powder I employed was a mixture of starch powder, zinc oxide, and boric acid in equal proportions. The mixture is dehydrating, stimulating, and antiseptic. Moist antiseptics and fomentations are not to be recommended, even if the case is septic.

Amputation should be postponed to the last, but never delayed unduly at the risk of the patient's life. I have seen one death follow a too strict adherence to conservative treatment. So long as the patient is suffering but little from the effects of toxic absorption, and pulse-rate and temperature are satisfactory, the iodine and powder treatment ought to be persevered with. When patients are first received into hospital from the front they seem to be in a much worse condition than reality justifies; their vitality is sapped by exposure in the trenches and the hardships of transport by train and ambulance. Some of them had been without food for two or three days, and arrived at their journey's end constitutional wrecks, broken down mentally and physically. It will hence easily be understood how many of the cases, with foul-smelling and swollen feet, discoloured, gangrenous, and septic, convey at first the impression that the condition is an extremely grave one, and that life is in imminent danger of dissolution unless prompt radical treatment is instituted. After a few days of hospital comforts, however, with rest, warmth, and food in plenty, improvement in general health is rapid, and concurrently the local lesions assume a much healthier and less morbid appearance. When amputation was the only choice the leg was removed below the knee. Other cases, showing ingravescence of the gangrenous area, were removed to England.

Treatment in the early days of convalescence is similar to that adopted in the milder cases. The essentials are massage and exercise, with rigorous avoidance of cold, wet, and fatigue. It may be commenced with as soon as the patient will allow it, when pain and swelling have somewhat abated. The most difficult symptom to overcome is pain, which outlasts the swelling for a considerable time and is often of a recurrent character, disappearing altogether for a day or week, then returning with crippling intensity with a change in the weather or the continuance of work, thus in a way resembling chronic rheumatism. When this occurs confinement to bed again becomes necessary. Drugs confer only temporary relief. Frequently one of a fatigue party from among the convalescents had to be readmitted to hospital for painful, occasionally for swollen feet. This was not a mere plea to escape work, for often as not it was a Gurkha who was thus disabled, a man who was always willing to help and seldom a shirker. The sooner a patient is put on exercises, at first in the ward and then as one of a fatigue party, the better. Too protracted a stay in bed or hospital renders the feet very sensitive. A return to the normal condition is best brought about by encouraging a normal circulation which will follow on the physiological use of the parts concerned.

Salford.

Medical Societies.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Unusual Degeneration of the Cervix.—The "Dublin Method" for the Third Stage of Labour.—The Alexander-Adams Operation.

A MEETING of this section took place on March 12th, Dr. M. J. GIBSON, the President, being in the chair.

Dr. ALFRED SMITH showed a case of an Unusual Degeneration of the Cervix in a patient, aged 60, the mother of 16 children, who consulted him for a profuse slimy discharge. The menopause came on ten years ago. She had enjoyed good health up to August last, when she noticed a slimy discharge from her vagina, without hæmorrhage, pain, or offensive odour. On bimanual examination the vaginal portion seemed to have disappeared, the margins being flush with the vaginal vault, the os being so dilated as to admit the index and middle fingers. There seemed to be no internal os; the cavity of the uterus was greatly dilated; the mucous membrane felt like velvet pile. This slight palpation caused hæmorrhage. On curettage, quantities of brain-like matter reported non-malignant came away, as in cancer. Simple panhysterectomy was performed. The total length of the uterus was 12 cm., fundus 3·5 cm., cervix 8·5 cm., greatest width 6·7 cm. The fundus was normal, but the cervical portion was greatly thickened, due to the transformation of the normal muscle wall into a spongy mass infiltrated with mucoid material, directly continuous with much mucus in the cavity of the cervix. The whole contour of the cervix was affected, more markedly in the anterior and left wall. The true cervical wall was represented by a thin layer of fibro-muscular tissue. No evidence of malignancy. The specimen was in the nature of a channelled mucous polypus, but was remarkable in that it engaged more or less uniformly the whole of the cervical wall.—Dr. E. HASTINGS TWEEDY said it seemed to be an adenomatous condition of the mucous membrane, something like a mucous polypus, spreading over the entire surface.—Dr. R. J. ROWLETTE said he had never seen anything like this exhibit. It possessed remarkable similarities to the glandular structure found in mucous polypi. Why a tumour should sometimes be so confined and at another time so diffuse as this was a problem.

Dr. T. P. C. KIRKPATRICK investigated the claim put forward that the method of conducting the third stage of labour, known for so long as the "Dublin method," had originated in Dublin. He showed by extracts from the "Midwifery" of Fielding Ould, published in Dublin in 1742, that this method was not then taught by him. After Ould, the next work on midwifery by a Dublin writer was that published by Foster in 1781; yet even in this work the "Dublin method" was not clearly described. In 1768, however, John Harvie had published in London a short pamphlet in which he gave a clear and exact description of the method. It seemed probable, then, that Harvie was the first to describe the method, and that subsequently it was adopted as the teaching of the Dublin Lying-in Hospital. Though the Dublin school might not be able to claim the honour of having first described the method, yet that school deserved credit for so early recognising its value and for so consistently teaching it.—Dr. R. D. PUREFOY said he thought the idea of robbing the Rotunda Hospital of the credit of producing a practice which obstetricians all the world over admitted was a markedly safe one might have been left to someone else. That Dr. Kirkpatrick had succeeded in the task he for one was very unwilling to admit. He had not studied Ould's book with sufficient care to know his views on the management of the third stage, but to the Dublin school this method of management of the third stage had long been credited, and in Spiegelberg's "Midwifery" it was alluded to as the Dublin method. The fact that Dr. Harvie described the method did not prove (although he must be given full credit for having used it in his own practice) that it originated in England. He could not help thinking that this practice had been known for a very long time, and in those early days they were not so keen to support their claims as originators because it was considered that they were generally admitted. He hoped that he might obtain evidence that this method of treating the third stage was in general practice in Ireland very shortly after Sir Fielding Ould's book was published, although not specially alluded to, because it was generally recognised. He considered it a pity that they should be deprived of the credit of what he believed to be the practice of the Dublin school for a very long time.—Sir WILLIAM SMYLY expressed their indebtedness to Dr. Kirkpatrick for his careful research. There was no doubt that the description published by Dr. Harvie was what was now generally known as the Dublin method, but credit was more often given to the person who popularised the method than to the person who first described it. The method appeared to be only mentioned by Dr. Harvie, who did not even appear to attach much importance to it, as he placed two other methods before it, whereas in Dublin it was exclusively and systematically taught for generations. When Spiegelberg visited this country he reported that the two things which impressed him most were the Dublin method of the delivery of the placenta and the use of chloroform in Edinburgh. Sir William Smyly did not think Credé's method was the same as the Dublin method; it was much more active and designed to get rid of the placenta as soon as possible. Sir William Smyly thought the very best method was the one referred to as being practised by primitive people—i.e., sitting in the crouched position and rubbing the hypogastrium with the hand, and he suggested that the Dublin method was an adaptation of that. After trying different methods he had come back to the Dublin method as the best.—Dr. TWEEDY said that all Dublin obstetricians had been accustomed to look upon Sir Fielding Ould as the founder of the Dublin method of dealing with the third stage of labour. The method was not described in Ould's book, which, however, was written when the author was only 21 years of age, and before he had acquired any practical experience in obstetrics. It was, therefore, quite possible that the method described by Harvie originated with Ould.—Professor A. J. SMITH said that he had gone through the literature to ascertain the claims of Dublin but he could get nothing but tradition to support it. Sir Arthur Macan, although very much in favour of German methods and literature, was convinced that this method originated in Dublin. Harvie's book did not come under their notice at the time. He agreed with Dr. Purefoy that the case was not proven.—Dr. KIRKPATRICK replied.

Dr. D. G. MADILL reported the After-results in 250 Cases of the Alexander-Adams Operation performed at the Rotunda Hospital during four years, and described the method of doing the operation with a single incision.—Professor SMITH said that in his own experience the type of case suitable for Alexander's operation hardly required an operation at all. Patients who came into St. Vincent's Hospital complaining of backward displacement, menorrhagia, and menstrual pain were first examined under an anæsthetic. If the uterus was found to be mobile a simple method of replacement was adopted by applying the weight of the ordinary Rotunda douche, which usually brought the uterus through the Bozeman's catheter into position. The patient was then put back to bed and examined on the third day; the uterus was usually found to remain in position. In that type of case the Alexander operation was usually performed, and gave good results in a limited class of cases, but he thought it would not do so if the uterus was enlarged.—Dr. TWEEDY said neither Dr. Madill nor anybody else could say that he had not been mistaken in bimanual examinations, and it was the possibility of these mistakes which robbed Alexander's operation of its value. Personally he favoured the operation of ventrosuspension, but his results from vaginal suspension had also been good. Nine patients on whom this operation had been performed all expressed themselves as having been improved, and four had become pregnant and delivered themselves normally. He thought Dr. Madill had curtailed the operation greatly when he suggested that it should not be done for sterility.—Dr. GIBBON FITZGIBBON thought that any operation for the cure of retroversion of the uterus would produce as good results as the statistics brought forward showed. He agreed with Dr. Tweedy that there were no complications after ventral suspension. He had never found any trouble arising afterwards in pregnancy or parturition. Out of seven cases in which he had done vaginal suspension during the child-bearing period, one afterwards had twins and two others had had single pregnancies, without complications. Many cases of retroverted mobile uterus caused no symptoms unless there was trouble in the tubes, in which case ventral suspension enabled an attempt to be made to correct the cause of the sterility. One came across adhesions of the tubes in cases with a mobile retroverted uterus, but with practically no thickening of the tubes which would be palpable by bimanual examination.—Dr. PUREFOY said Dr. Madill had pointed out to them the points of chief importance in the successful performance of the operation. During Dr. Purefoy's Mastership at the Rotunda this operation had not come into general use there, and he was against it because a woman came into the hospital and said that that was the third miscarriage she had since she had this operation performed by the inventor in Liverpool. He had on several occasions since seen the operation performed in the Rotunda Hospital, and he thought Dr. Madill's statement a powerful one for the operation in the cases he had indicated.—Dr. B. SOLOMONS said that in cases of prolapse of the uterus, in addition to plastic work by the vagina, he considered Alexander's operation very useful. In cases in which the retroversion occurred post partum, and where palliative treatment failed to produce a cure, an Alexander-Adams operation was most suitable. He suggested if either Alexander's operation or ventral suspension were properly performed there would be very little difference in the results. He found that the Alexander-Adams operation was effective in producing a cure without inserting a pessary afterwards.—The PRESIDENT said that in dealing with mobile retrodisplacement three classes of cases generally came under consideration. Firstly, the unmarried woman with uncomplicated retrodisplacement. These patients had no symptoms which could be attributed to displacement, and correction of the displacement was not necessary. Secondly, the married woman bearing children and suffering, as many did, from retrodisplacement complicated with descent, associated with definite discomfort. Examination under anæsthesia and the absence of history of infection enabled adnexal trouble to be excluded, and in these cases vaginal repair with correction of the displacement by the Alexander-Adams operation gave excellent results. Thirdly, the sterile married woman. If a transverse incision were made the tubes might be examined and treated, and the Alexander-Adams operation performed without difficulty. He preferred the Alexander-Adams operation to ventral suspension because relapse was not so liable after parturition, and the position obtained is more normal.—Dr. MADILL, in reply, said that he had seen Sir William Smyly perform a modified Gilliam's operation that morning, and it appeared to have most of the advantages of the Alexander, and, in addition, there was the extra advantage of seeing the inside of the abdomen. He admitted that a weak point was that one could not be absolutely certain, but he was glad to have the support of the President that one could be fairly certain after examination under an anæsthetic. He had nothing to urge against ventral suspension, except to doubt that the uterus remained in position after confinement. If there was no recurrence he was certain it was a better operation than the Alexander-Adams.

Reviews and Notices of Books.

Archbold's Lunacy and Mental Deficiency.
By JAMES WILLIAM GREIG, of Lincoln's Inn, K.C., and WILLIAM H. GATTIE, of Gray's Inn, Barrister-at-Law. Fifth edition. London: Butterworth and Co. and Shaw and Sons. 1915. Pp. 1058. Price 36*s.* net.

THE medical practitioner who comes in contact with the treatment of insanity and the formalities accompanying the custody of the insane only as incidents of his general practice will hardly need to provide himself with so exhaustive and weighty a volume as this. It is, however, otherwise with officers of county and borough asylums or their committees, who, doubtless, will be willing to defray the cost, and with those who, being the proprietors of licensed houses, have to be constantly and unremittingly certain of their ground in dealing with patients with regard to whom the law exercises proper and necessary vigilance. For such as these "Archbold's Lunacy" is a leading and authoritative text-book of the law, and if it has been somewhat augmented in its physical weight and bulk by the inclusion of the Mental Deficiency Act, and contains many pages which will not closely concern him whose professional work is the purely medical care of the insane, it is nevertheless a compendious treatise to which reference may have to be made at any time, when unexpected points arise, as well as on occasions of more usual occurrence.

How far the single-volume form may be preserved without inconvenience when there is ample material for two more readily handled volumes will be a matter for editorial consideration, as the subjects to be dealt with increase periodically and become more or less naturally divisible. The editors in the present case point out that the law of lunacy, so far as it is governed by the principal Act, that of 1890, divides itself into two chief groups of provisions. The first consists of those which are to be administered by the Commissioners and the Board of Control (constituted by the Mental Deficiency Act), by justices of the peace, county and borough councils, guardians of the poor and their officers, officers of county and borough asylums, managing committees and officers of hospitals, visitors, proprietors, and officers of licensed houses, and persons having the charge or being the medical attendants of single patients. The second group is those administered by the Lord Chancellor and the judges for the time being entrusted with the care of the persons and estates of lunatics, and by the masters in lunacy, Chancery visitors, committees, and medical attendants of lunatics so found, and by persons exercising, under the authority of the above higher officials, powers over the property of lunatics not so found, resembling those exercised by the committee of the estate of a lunatic who has been so found. How far this classification might lend itself to a two-volume form in the work in question is a matter worth considering, even though the use of a decidedly large book where a smaller one could be made available is only a matter of temporary inconvenience to the individual. There are, however, branches of the law of lunacy, included in such Acts as the Criminal Lunatics Acts, the Lunatics' Removal (India) Act, 1851, the Colonial Prisoners' Removal Act, 1884, and the Criminal Lunatic Asylums Act, 1860, which fill a good many pages to which recourse would be had only by lawyers in connexion with one particular phase of insanity and still less often by medical practitioners, from whose point of view we are regarding the subject.

The Mental Deficiency Act and the provisional regulations made under it are, no doubt, the most important addition to their previous work which the present editors of Archbold's Lunacy have had to make, and will be found to constitute a new part, "Part III."; the previous arrangement, by which Part I. dealt with the Lunacy Acts of 1890 and 1891, and with matters of cognate character, and Part II. with Criminal Lunacy, being retained. A brief introductory note preceding the Mental Deficiency Act calls attention to its scope and general outline in clear and succinct terms, and the explanatory notes to the sections of that Act should be of use to all who have to deal with a new piece of legislation, the interpretation of which has yet to become matter for direct judicial decision. In addition to the Mental Deficiency Act there have also been passed since the last edition of this work was issued, the Lunacy Acts, 1908 and 1911, the Asylums Officers' Superannuation Act, 1909, and the Lancashire County (Lunatic Asylums) Act, 1902. As well as these statutes, new rules and alterations of rules have had to be recorded.

Atmospheric Air in Relation to Tuberculosis.

By Guy Hinsdale, A.M., M.D., Hot Springs, Virginia. City of Washington: Published by the Smithsonian Institution. 1914. Pp. 136.

This volume is one of nearly a hundred essays entered in competition for a prize of $1500 offered by the Smithsonian Institution for the best treatise "On the Relation of Atmospheric Air to Tuberculosis," which was presented in connexion with the International Congress on Tuberculosis held in Washington in 1908. The essays were submitted to a committee of award, and the prize was divided equally between Dr. Hinsdale and Dr. S. A. Knopf, of New York City. At the request of this institution Dr. Hinsdale has revised his essay so as to indicate some of the advances made in the study of the subject during recent years, with the result that he has published an interesting monograph on aerotherapy in relation to tuberculosis.

An account is given of the influence of the air of forests, of inland seas and lakes, and of sea air on pulmonary tuberculosis. The effects of compressed and rarefied air and of high and low atmospheric pressure are also considered. Dr. Hinsdale takes a broad view of the value of climate in the treatment of tuberculous disease. He does not claim that there is any specific climate, and considers that the long search for such a climate is apparently at an end. He maintains, however, and his contention will be endorsed by most physicians, that climate may be utilised as an adjuvant of great value for carrying out the hygienic and dietetic treatment of all forms of tuberculosis. He also rightly points out that there are some elements of climate that have a more positive influence in hastening cures than others. Undoubtedly the first place among these must be assigned to an abundance of air, as nearly as possible bacteriologically and chemically pure. The value of sunshine is also insisted on, and Dr. Hinsdale believes that the moral effect of a large number of bright, sunny days is very great.

The questions of temperature and of the amount of moisture in the atmosphere are duly discussed, and the conclusion is arrived at that probably the best combination is a low humidity and a moderately cool atmosphere. As far as altitude is concerned, Dr. Hinsdale expresses the opinion that it probably has not, *per se*, any great influence. A comparison of the statistics from sanatoriums situated on the sea-level and at various heights tends to corroborate this view.

There is much that is interesting in this volume; it is well written and illustrated by a large number of plates, mainly reproduced photographs of institutions for the treatment of tuberculosis.

A Text-book of Radiology.

By E. Reginald Morton, M.D. London: Henry Kimpton. 1915. Pp. 221. Price 7*s.* 6*d.* net.

This is a very valuable addition to the more recent literature dealing with X rays and their use in diagnosis and treatment. It is essentially a practical handbook and, whilst it is obviously written with a full appreciation of the difficulties which beset the path of one who is beginning to work at X rays, the information is so arranged that it will be of the greatest service to that part of the medical profession which relies on the radiologist for aid in the diagnosis of medical and surgical conditions depending upon structural abnormalities of the skeleton and viscera.

Roughly speaking, the book may be regarded as consisting of three parts. The first deals with the elements of electrical principles as applicable to X ray apparatus. This part of the book is the least noteworthy, and perhaps a little more space might have been devoted to information about the various sources of electrical supply—e.g., primary batteries, accumulators, dynamos, &c., and the methods of distribution and modification of electric supply from generating stations; a little more also might with advantage have been added about the means of measuring electricity and the instruments in use for that purpose.

The second part consists of an excellent account of all such apparatus as is essential to an up-to-date installation. This information is very full, and explains lucidly the latest improvements both in instruments and in the methods of using them to the best advantage. It concludes with a useful chapter on regional radiography. Chapters XIII. to XV. are full of information on the latest knowledge concerning the pathological anatomy of the digestive, vascular, and excretory systems, illustrated by many excellent X ray photographs and diagrams which carry conviction with them. This is by far the most original and interesting part of the book, and deserves careful and close study. The last chapter is devoted to X ray therapeutics, and contains valuable instruction on dosage and other practical details.

The book is well printed, the illustrations are excellent, it is of a handy size, and neatly bound.

An Index of Symptoms.

By Ralph Winnington Leftwich, M.D. Aberd. Fifth edition. London: Smith, Elder, and Co. 1915. Pp. 516. Price 10*s.* 6*d.* net.

The fifth edition of this excellent work has been brought up to date by the inclusion of many new tests, of a number of new symptoms, and by amplification of the interlinear notes. But substantially the book remains the same valuable compilation as heretofore, one which the practitioner, be he junior or senior, will find a constant help in his daily work. The various notes are most sensible, and in many instances are of the obvious kind that makes the reader say, "Why did I never think of that before?" For example, in section 1261, The Intellect, Dr. Leftwich says, "Unaccustomed environment may give a false impression of dulness. As the sheep is clever enough on its ancestral mountains, but is dull on the plains, so the yokel seems dull in a town and the townsman scarcely less so in the country. Deafness also gives a false impression of dulness." This is a very necessary caution to bear in mind.

There is one paragraph concerning which we must join issue with Dr. Leftwich—namely, No. 1396, headed Parergiæ. The paragraph deals with phenomena such as Babinski's fan sign, and Dr. Leftwich rightly says that though this and other similar phenomena are generally classed as reflexes the two differ very essentially. "A term implying collateral action is preferable, and the writer suggests Parergia (*πάρα ἔργον*)." There is a perfectly good Greek noun, *πάρεργον*, meaning a by work, and it is needless and inaccurate to convert this into a Latin feminine. So we suggest the use of parergon for the singular and of parerga for the plural. We are sure that Dr. Leftwich would not speak of protozoæ. This, however, is a small blemish in an otherwise admirable compilation.

A Text-book of Physiological Chemistry.

By OLOF HAMMARSTEN, Emeritus Professor of Medical and Physiological Chemistry in the University of Upsala. With the collaboration of S. G. HEDIN, Professor of Medical and Physiological Chemistry in the University of Upsala. Authorised translation from the author's enlarged and revised eighth German edition, by JOHN A. MANDEL, Sc.D., Professor of Chemistry in the New York University and Bellevue Hospital Medical College. Seventh edition. New York: John Wiley and Sons; London: Chapman and Hall. 1914. Pp. 1026. Price 17*s.* net.

THE advances made in physiological chemistry, or, as some prefer to call it, biological chemistry, are so rapid that even a text-book written a year ago requires in many of its chapters to be recast, and the voluminous title-page of this work indicates alike its growth and the evolution of the science with which it deals. The veteran Professor Hammarsten, now in his seventy-third year, has felt the impossibility of keeping abreast for more than a certain number of years with the developments of physiology, and has adopted as a collaborator his successor Professor Hedin, who is responsible for the revision and reconstruction of the following chapters: I., On General and Physico-Chemistry; III., Carbohydrates; VIII., Digestion; XII., Organs of Generation; and XVI., Respiration and Oxidation. The other chapters were dealt with by Professor Hammarsten himself. Practically the general plan of the work remains unchanged. Some of the facts about oxidation have found a more appropriate setting than heretofore.

The first chapter deals with subjects on the zone common to physics and chemistry, such as osmotic pressure, colloids, catalysis, enzymes and ions, and salt action, just those subjects to which the average medical student pays the minimum attention. Under protein substances we notice that the term "albuminoids" is retained to include keratins, elastins, collagens, gluten, and reticulin, substances which in English text-books are usually grouped as sclero-proteins. Again, while we generally use the term protein, its precursor proteid is here sometimes used. Protamines are treated as true members of the group. Under coagulation of the blood we find the statement that coagulation "is prevented by the injection of an effusion of the mouth of the officinal leech" (p. 251). We did not find specific details about the so-called "biological reaction."

It should be stated that as in previous editions there are no illustrations, save one plate of blood spectra. Elaborate methods are no doubt purposely omitted, though the usual tests for many substances are given. In footnotes to each chapter full and sufficient references to the literature are given. The index of authors is very long, running to 36 pages, while the general index occupies 43 pages.

This work gives a straightforward, very readable, and succinct account of physiological chemistry. It is not overloaded with details and elaborate methods. In relation to certain important methods the principle of the method is stated. We can cordially recommend it as an excellent survey of chemical phenomena and facts in their physiological aspects.

Know Thyself.

By BERNARDINO VARISCO. Translated by GUGLIELMO SALVADORI. London: George Allen and Unwin, Limited. 1915. Pp. 327. Price 10*s.* 6*d.* net.

THE author takes as his text the saying of St. Thomas, "Intelligendo se, intelligit omnia alia." But whereas St. Thomas applied the words to God, Professor Varisco believes them to be applicable to human beings. He endeavours to show that by knowing himself he knows everything else as well. He is inspired to deny even the existence of any sphere of the Unknowable. The doctrine of an Unknowable he regards as a philosophic absurdity, although an inevitable result of scientific methods of inquiry.

The attitude is somewhat presumptuous. St. Thomas did but endeavour to define in an epigram the attributes of God. But the proposition that Professor Varisco's or anyone else's personality is of so all-embracing a description that knowledge of it implies a knowledge of everything else in heaven and earth is one which is neither reasonable nor justified by its results. A perusal of Professor Varisco's work indicates an apparent failure to "know" either himself or any of the main characters of the human mind. On his own principles his attempt to unveil the mysteries of the Unknowable breaks down on its unstable foundations.

Professor Varisco is not the first to imagine that the possibilities of the universe are limited by the narrow confines of his own soul, but he has learnt no lesson from the unbroken failures of his predecessors. He cannot reconcile himself to the conclusion of science, that there are some things which man cannot know. He will not reconcile himself to that conclusion because it is a disagreeable conclusion, which he would gladly see otherwise. So little does he really know himself that he makes his personal sentiments and predilections the test of truth and reality; he cannot disprove the conclusions of science, so he denies that the method of science is the correct method of reaching conclusions. If he were to apply in practical life his doctrines of "theoretic philosophy"—if he proposed to drive a steam engine or to treat a patient simply by knowledge of himself—his career would be brief. He is prudent enough to question the authority of science only in those regions which science has abandoned to the Unknowable. If Professor Varisco's views were to prevail we should be plunged once more in the darkness which preceded the work of Francis Bacon, for Bacon spread the doctrine that truth was to be found by looking outside at the things around us, instead of inside into our own minds. As things are, works like that of Professor Varisco cannot but accelerate the collapse of much verbiage and casuistry which is dignified by the name of metaphysics.

LIBRARY TABLE.

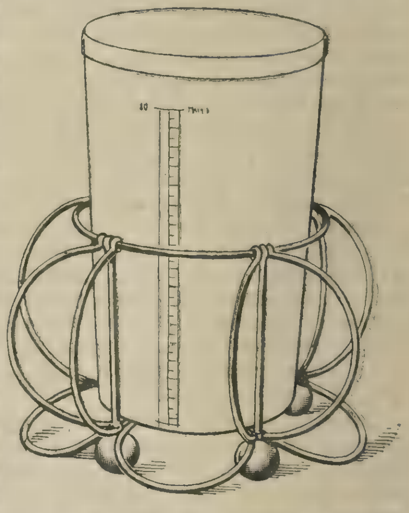
Studies in Questions Relating to Eye-training. By William Phillips, M.A., Professor of Education at the University College of South Wales and Monmouthshire, Cardiff. London, Glasgow, and Bombay: Blackie and Son, Limited. 1914. Pp. 138. Price 1*s.* 6*d.* net.—The term "eye-training" has been used loosely in pædagogic circles, and many teachers and others have been led to think that the efficiency of the eye as an optical instrument can be increased by training or special exercises. Hence much ingenuity has been expended on devising exercises—woodwork, sloyd, and so on—and much of the pupil's time has been occupied with them. So far as medical men conversant with the structure and physiology of the eye and its neuro-muscular apparatus are concerned, it was unnecessary to write a book to disprove the obviously faulty thesis. Such "eye-training" is a training of the mental eye and may so far be of great value. The book, however, small as it is, is packed with information of the greatest interest to medical men, especially to ophthalmologists. The author wanders along some fascinating by-paths. He deals, for instance, with the vision of the savage as compared with that of the civilised man, the supposed heightened sensitiveness of the blind and deaf, women's supposed special sensitiveness to colour differences, the peculiarities of animal vision, and the physiology and psychology of visual perception. He has read widely and studied deeply, and he has shown excellent judgment in his reasoning and conclusions, which are clearly and concisely set forth. The scientific accuracy throughout the work is remarkable, seeing that the author is a teacher who has presumably had no medical training. He may perhaps have been saved some errors by Dr. W. H. R. Rivers, to whom he expresses his indebtedness for reading through the proofs. We have noted one or two doubtful statements, but they do not seriously impair the value of the book. The longest chapter deals with school hygiene, with special relation to myopia. It contains some useful references to statistics. Some of the statistics quoted convey the impression that the author regards a visual acuity below 6/6 as necessarily due to myopia. If this be so, it nullifies much of the argument, but we may be mistaken. In any case this should be placed beyond doubt in a future edition. We warmly recommend the book, which has a much wider appeal than its title indicates.

Burdett's Hospitals and Charities, 1915: the Year Book of Philanthropy and Hospital Annual. By Sir Henry Burdett, K.C.B., K.C.V.O. London: The Scientific Press, Limited. Pp. 988. Price 10*s.* 6*d.* net.—This volume no longer needs detailed description. As a concise review of the position and requirements of the various charities dealt with, and as a trustworthy guide to British, American, and colonial hospitals and asylums, medical schools and colleges, nursing and convalescent institutions, consumption sanatoriums, religious and benevolent institutions and dispensaries, it deservedly occupies a very high place, and to say that it is indispensable in no way exaggerates its importance. A valuable part of the book is the record of hospital work for the year, and the chapter devoted to the future outlook and extension of voluntary hospitals will repay very careful perusal. Sir Henry Burdett believes that the Government cannot do without the help of the voluntary hospitals, and that it must face the twofold demand upon these institutions for the treatment of Government cases arising out of the National Insurance Act and from the war. With regard to the first matter, the editor points out that the year 1915 may prove memorable in the history and development of voluntary hospitals throughout the country; for in this year the first valuation under the National Insurance Acts will take place, and it is anticipated that the deficiencies which may have occurred will necessitate fresh legislation. In regard to the second matter, it is noted that the war has entailed heavy additional burdens upon the voluntary hospitals through the admission of large numbers of sick and wounded sailors and soldiers, that these burdens will become heavier as the war proceeds, and that no definite or adequate provision has yet been made by the Government to defray the cost of treating the sick and wounded in the voluntary institutions. That the situation is a grave one is shown by the fact that at the end of 1914 the financial position of the voluntary hospitals "represents an extra expenditure of not less than one million sterling, and probably in the whole may approximate two millions, which extra expenditure is due principally to new legislation, extra taxation, and the war."

New Inventions.

A NEW SPUTUM CUP AND HOLDER.

The chief features of this sputum cup and holder are indicated in the accompanying figure. The cup, which is made of waxed paper, has attached to it a cover of similar material. It does not require sterilisation, as a new cup is used every day, the soiled cup being burnt with its contents. But it is easily knocked over when used alone, and it was to get over this difficulty that the holder was made. I originally designed the holder for use at the Royal Hospital for Diseases of the Chest, City-road, E.C. It is a structure of wire resting on steel balls. Owing to its low centre of gravity and to certain wire loops it cannot be upset. It has four double handles, so that it can be readily and firmly grasped. It can be sterilised by means of boiling water as often as may prove necessary, but it is not likely to be contaminated with sputum by a patient with cleanly habits.



The waxed paper cup is made by Mono Service Vessels, Limited, Park Royal, London, W., and the sputum-cup-holder by Messrs. H. F. Angus and Co., 83, Wigmore-street, W.

H. E. Symes-Thompson, M.D. Cantab., M.R.C.P. Lond., M.R.C.S.

Cavendish-square, W.

THE LANCET.

LONDON: SATURDAY, APRIL 17, 1915.

Drink and Prohibition.

NATIONS, like individuals, are often forced in crises of their fortunes to take prompt and decisive action with regard to problems which in less strenuous times they have regarded as far too difficult and complex to be dealt with save after prolonged study and deliberation, and by partial and tentative measures. That is the situation at the present moment in this country with regard to the drink question. Under the stress of the formidable struggle in which we are now engaged we have been compelled to recognise that alcoholism is impairing our national efficiency in a degree which, even if we make full allowance for the exaggeration of prejudiced statement, constitutes a real and serious danger. It is natural that under such circumstances there should be a demand for heroic measures, and within the last few weeks the suggestion has been put forward in various quarters that the solution of the difficulty is to be found in the absolute prohibition of alcoholic liquors. While the advocates of this radical method are doubtless justified in their belief that, if it could be carried into effect, it would certainly meet the alcoholic danger, it is not quite clear that they have taken due account of the disturbing influence which its adoption would exercise on the economic life of the community, and for this reason we welcome the announcement that a strong committee has been appointed to assist the Government in its decision, and has been granted full powers to deal with the alcohol situation as a whole. Financial disturbance would not, of course, merit consideration if there were no other means than prohibition for enforcing national sobriety. But if the desired result can be attained by less violent measures it would obviously be preferable to avoid introducing any fresh sources of confusion in a time of crisis, and this is the thing which the new committee has to settle upon all the evidence available.

The problem has arisen more particularly in connexion with the efficiency of labour in the manufacture of munitions of war, in the shipbuilding yards, and in the transport industry. It has been asserted by large employers of labour engaged in the armaments trade and in shipbuilding that there has been culpable slackness on the part of a section of the workmen employed on the vitally important tasks of producing ammunition and repairing vessels of war, and that this slackness is largely due to excessive drinking. There appears to be no question as to the accuracy of the facts in relation to some centres of labour, though opinions may differ as to the proportion of workmen who lie under this censure, and as to the extent to which other factors, and notably the factor of overstrain, may have contributed to the production of inefficiency. And, however regrettable it may be that such a cause should be operative in a time of national emergency, there is nothing novel or surprising in the fact that alcoholism is unduly prevalent amongst the workmen engaged in the industries to which we have referred. As was pointed out some years ago, the practice and tradition of industrial drinking—that is to say, of drinking as an aid to muscular work—are nowhere more firmly established than in the class of casual dock labourers and amongst iron-workers, and in the latter group it is precisely in the semi-casual class of marine repairing engineers that this type of alcoholism is especially rife. The war, by withdrawing to active service a large number of the efficient and robust men engaged in the metal trades and in shipbuilding, gave to the less fit and less energetic men, and to the men employed by small masters with laxer standards of work and sobriety, the chance of being taken on in the larger and better class factories and yards; and naturally the greatly increased demand for war material operated in the same direction. As a result these men, accustomed to the use of alcohol as an industrial stimulant, and urged on to increased effort in the general speeding-up of work, carried into their new jobs the drinking habits which, not yet extinct even in the works of large employers, flourish freely in the lower ranks of these trades; and so the tradition of industrial alcoholism would naturally be spread and strengthened. It is hardly necessary to add that under such conditions the liberal wages paid in this period of booming trade furnished ample opportunity for convivial excess with further aggravation of slackness and inefficiency. It is a matter for regret that until the present crisis temperance reformers have for the most part given singularly little attention to this aspect of the drink question, and that their efforts have never been directed with much energy to combating this, by far the gravest and most intractable form of alcoholism. In this, as in so many other matters, we are suffering in time of war for our lack of organisation in time of peace. If the provision of adequate canteen arrangements had been more stringently enforced, if employers had been educated by appeals to their self-interest to prevent the introduction of liquor on their works, and if some of the energy applied to securing the early closing of public-houses had been directed to preventing their early opening, much might have been done to break the force of the tradition of industrial drinking to which the present discreditable state of affairs is so largely due. The whole subject has been dealt with by Dr. W. C. SULLIVAN in a work entitled "Alcoholism, a Chapter in Social Pathology," which at the present moment is a very illuminating treatise.

Modest measures, such as those just enumerated, may yet serve a useful purpose, but it is obvious that to combat the dangers of the existing crisis it is necessary to have recourse to more drastic remedies. And of these remedies the most effectual would undoubtedly be the prohibition of distilled spirits. It is chiefly in the form of spirits, especially as gin or whisky, that alcohol is taken in industrial drinking; at all events, in the metal industries and in the shipbuilding yards. Amongst other advantages that spirits possess for this purpose, their portability and the comparative ease with which they can be smuggled into workshops, give them a special attractiveness to the industrial drinker. And we may note here that limitations of the hours of public-houses tend in the same way to enhance the value of spirits and lead to their increased consumption in lieu of beer. At Cardiff, for instance, it has been observed that one effect of the early closing regulations which came into force last September has been to cause an appreciable increase in the sale of bottled spirits, and the same thing has probably occurred elsewhere. On this ground, then, as well as on account of their more deleterious effect on health, spirits are in a special category, and their suppression would be free from the risks and inconvenience that might result from complete prohibition. Moreover, the prohibition of spirits would be practicable, while all experience goes to show that complete prohibition cannot be made a reality without the support of a united public opinion; and when it is not a reality it means, as a rule, an increased use of the stronger and more injurious alcoholic liquors, and the development of an illegal traffic which corrupts public morality. On the whole, therefore, it seems reasonable to conclude that the exigencies of the present situation do not justify any such measure as absolute prohibition, but that the prohibition of spirits would probably lead to a considerable diminution of the alcoholism which is impairing the industrial efficiency of the armament factories and the ship-yards. And we may add, as a further argument in support of this policy, that the more limited measure of abolishing the sale of spirits is not likely to produce any such reaction to intemperance at the end of the war as would in all probability follow on the cessation of a temporary system of complete prohibition. This danger would be even less likely to arise if the present exceptional opportunity were seized to reorganise the public-house on rational lines as a place of decent resort.

"Frost-Bite" or Trench-foot.

ONE of the most striking of the illnesses from which our troops have suffered at the front has been that condition to which the name of "frost-bite" has been applied for want of a better appellation. It is to be hoped that the knowledge of this serious condition which our medical officers in the army now possess will lead to the consideration and formulation of preventive measures ready for adoption in future need. With the advent of spring this new scourge of armies is disappearing, as we are informed by Sir JOHN FRENCH'S last despatch, but it is most important that we should learn from the severe lessons that we have received in the matter, if only because no one can say that in the ensuing winter we shall not want to draw upon our information. The number of the papers and letters on the subject which have appeared in the columns of THE LANCET has testified to the interest which has been excited amongst our surgeons by the appearance of these lesions, and by the questions as to their etiology, their prevention, and their treatment. The views held by many observers are held in common, and give us trustworthy directions as to cause and treatment, at any rate; anything like systematic prevention could not be attempted this winter, for the trouble was not foreseen until it arrived.

The term "frost-bite" is not accurate, for all observers are agreed that this form of injury to the feet may occur when the temperature is above the freezing-point—in fact, according to one observer, frost was present in not more than 10 per cent. of the cases. The most severe lesions, however, seem to have been produced in those cases which were exposed to frost after getting thoroughly wet. A further point indicating that frost in itself has but little to do with causing this condition is to be found in the fact that the hands, the nose, and the ears, which are so very liable to suffer from true frost-bite, have escaped almost entirely in these patients. When we search for some predisposing cause we cannot find it in the general nutrition of the men, for in nearly every case the nutrition of the men has been good; in numerous instances the patients had been for some weeks receiving better food than was their wont. But undoubtedly in many cases a want of sleep, and a condition of nerve strain, may have assisted the appearance of the affection of the feet. What name should be applied to the condition is a difficult question, especially as those who are most acquainted with the subject are by no means unanimous as to the exact method of its production. Various names have been suggested, and amongst them may be mentioned chilled foot, trench-foot, trench frost-bite, boot-bite, and water-bite. It is better to employ a non-connotative name, and on the whole the term trench-foot appears to us to be the most suitable for a condition which has practically only been met with in those who have had to remain for long periods in the trenches. While there is no complete unanimity among those who have studied the matter as to the mode of production of the trench-foot, it is generally agreed that some interference with the circulation in all the tissues of the foot has been the most important factor. This interference comes mainly from the boots and from the puttees. If the boots are tight, then they will exert undue pressure on the feet, and this harmful pressure will be still greater if the attempt is made to obtain greater warmth by the use of two pairs of socks. The pressure will also be greater when the boots have become wet and hard. The pressure exerted by puttees is also of importance. If the soldier, in order to prevent the puttees from slipping down, applies them too tightly, they will interfere with the circulation; but even if, in the first place, they have been applied with no undue tightness, the action of the prolonged immersion in water will tend to make them tighter than they were, and so the pressure becomes greater. In addition to this interference with the whole circulation of the foot, the capillary circulation of the surface will be slowed by the cold, even though the temperature is well above the freezing-point, and the capillaries are contracted also by the cold. Then follows some exudation from the blood-vessels, and this exudation presses on the vessels from which it has come, and thus the circulation is still more obstructed. Another factor must not be disregarded: the men remain for many hours in the trench with hardly any bodily movement, the muscles are inactive, and the assistance which the circulation ordinarily receives from the movements of the muscles is not afforded, so that in this way also the circulation is still more hampered.

Such being in all probability the mode of production of trench-foot, as the very numerous reports which have reached us concur in believing, we must consider its treatment both remedial and prophylactic. To deal with the condition in its milder forms but little active treatment is needed. Two papers in THE LANCET this week describe the routine followed at different centres, and it will be seen that in the main it is similar. The patient should stay in bed, with the feet raised on a pillow, so as to favour the return of blood. In most cases the patients suffer less from pain if the feet are not bandaged at all; for keeping the feet warm usually increases the suffering, though there are exceptions to this rule. When there is no breach of surface, or the injury is slight, nothing more is required, but when bullæ are present some mild antiseptic application is required. Those that have been found of value are very numerous, so the surgeon has a wide choice, and the exact substance employed seems to matter little. When gangrene has occurred it seems to be clear that any early removal of the necrosed portions is undesirable, and even when the line of demarcation has formed the skin is generally much more extensively destroyed than are the deeper tissues, so that the total amount which has to be removed is generally very much less than might be thought at first, and the cases are few indeed in which a formal amputation is required. In cases where there is much pain it is essential that good sleep should be obtained, as on this the patient's general condition often mainly depends. Important, however, though the treatment of trench-foot is, still more important is its prevention, and this, of course, is what we now have to think of especially. We have to consider the possibility of another winter campaign, and we must be prepared in time for a condition which is new in military surgery, and is produced by new general tactics and circumstances. At first sight it appears that warmer clothing to the foot is the one thing needful, but this in itself may prove a danger. The wearing of two pairs of socks in boots that are only large enough for one will have a great tendency to interfere with the circulation of the blood, and this may lead to the trench-foot which it was intended to avoid. There must be general orders in respect of puttees; it could be pointed out that they may easily be wound too tightly round the legs, when they will interfere with the circulation. The boots must be loose; it is always advisable for the soldier to have the boots a size larger than he usually wears. The ideal wear for the foot in the trenches, loose-fitting wading boots, must be in many places impossible, as the soldier has not only to live in the trenches but also to march and charge. The expense has been mentioned as an objection to the supply of wading boots; but we do not think that this can be really put forward as an objection, if their use would prevent the invaliding of the thousands of men who have been suffering from trench-foot. All these points, most of them quite obvious, are now in the possession of the authorities, and we may be sure that organised steps will be taken in time to prevent a recurrence among our troops of a painful and distressing malady which has deprived us of the services of many otherwise able fighting men.

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Medical Officers of Health and the Army.

WE publish in another column an abstract of a document issued this week by the Local Government Board, entitled "Circulars and Papers relating to the Coöperation of Civil and Military Authorities in Sanitary Matters." This document deserves the close attention both of members of the civil public health service and of army medical officers, and should remove doubt, if any exists, as to the active part which the War Office desires civil medical officers of health to take in looking after the sanitary welfare of troops in camps or billets in this country. A previous circular, on which we commented in our issue of Oct. 31st, 1914, set out the position in this matter, which was then agreed to by both Government departments. Civil medical officers of health were to be consulted by the military authorities on the establishment of camps, or the arrangement of billets; their visits were to be encouraged, and in matters of importance they were authorised to make direct representations to the Deputy Director of Medical Services of the command concerned as well as to the Local Government Board. Arrangements were to be made wherever practicable through the county and sanitary authorities, and their public health officials, for the utilisation of isolation hospitals by the troops, for interchange of information as to infectious diseases, for disinfecting blankets and clothing, and generally for the undertaking of "sanitary services."

The scheme, which has been organised by the Local Government Board and directed by the medical inspectors of that department, has evidently developed considerably in importance and utility. The document now issued contains departmental letters of various dates settling the procedure in such questions as the payment from army funds of the charges of local authorities, the remuneration of sanitary officers, the arrangements for additions to civil isolation hospitals for the reception of military cases, and the inspection of food supplies. A series of notes on the "Inspection of Billets, Camps, &c., by Medical Officers of Health" sets out in a practical form some of the principal points to be attended to on these inspections, the importance of which has been illustrated by recent experience. Among these we note directions as to the method of communicating with the military authorities, and the condemnation of billets, or the reduction of the number of men in billets, on account of insufficient floor space, defective ventilation, insufficient lavatory, water-closet, or latrine accommodation, and other sanitary defects. It is requested that special attention should be given to cook-houses and places of food storage and messing-rooms, and it is stated to be essential that the medical officer of health should draw the attention of the officer commanding the troops to any uncleanliness of floors, tables, or feeding utensils. Small posts like guards at waterworks and bridges should not be overlooked, while camps are to be specially inspected, particularly in regard to overcrowding and to the method and efficiency of disposal of excreta, urine, sullage water, and food refuse. Directions of this kind are opportune at a time when large new movements of troops in the country are expected, and when new bodies of men, with a medical staff necessarily unfamiliar with the units under its charge and the sanitary requirements of the places were they are quartered, will be replacing forces going overseas.

In an article on the relations between the civil and military authorities which have existed during the war, published elsewhere in this issue of THE LANCET (p. 818), there will be found a letter addressed to the Local Government Board of the highest interest. In this letter, which also appears in the latest circular of the Board, the Army Council has expressed the opinion that the assistance which local public health authorities, and particularly their expert officers, have already rendered in the unexampled circumstances of the last eight months has been invaluable in safeguarding the health of the forces and in preventing the spread of infectious disease, and requests that the thanks of the War Office may be conveyed to the councils of the counties, boroughs, and sanitary districts concerned for the work thus performed. We are confident that these commendations have been well earned, and they will be read with satisfaction by medical officers of health who, perhaps against their personal inclination, have remained at their civil posts in the belief that by turning their special knowledge to its best use in the localities in which they act they are giving good service to the army as well as to the public health of the country generally, which it is so important to maintain at the present time. We do not for a moment urge that the public health service of the country should in all respects go on "as usual." Some branches of the work, such as that of medical inspection of school children, can be substantially reduced; younger men acting as assistant officers for tuberculosis dispensaries or isolation hospitals can be replaced by senior men and undertake army service, as many have done already. Factory chimneys may be allowed to go unwatched for a while, and routine housing inspection and other ordinarily necessary matters may well be curtailed. But epidemics must not only be met if they arise, but must be prevented with all possible vigilance, and dangerous environmental conditions must be as vigilantly sought out and dealt with as in times of peace. This means that the maintenance of an efficient public health service at home is essential, and it is well to have on record at this juncture that this necessity is as strongly realised by the army authorities as by the central civil public health department.

Annotations.

"Ne quid nimis."

THE SUPPLY OF DRUGS AS AFFECTED BY THE WAR.

WE have heard perhaps too much of the shortage of drugs. As a matter of fact, when we remember the extent to which this country had allowed itself to become dependent upon Germany for its supply of drugs, it is remarkable that after eight months of war there should be hardly any drugs of importance that are not obtainable in at least small quantities. Notwithstanding the steady drain on stocks that has been going on all this time, and the fact that the main source of direct supply has been cut off, it is really astonishing to find that drugs which up to the end of July last had been obtained almost exclusively from Germany can still be secured in reasonable quantities. Prices have naturally advanced very seriously, and some drugs, as stated in THE LANCET of March 20th (p. 625), are seven or eight times as dear as they were before the war. But the important question is not one of the price of drugs, but of being able to obtain them, and at the present time it would be possible to secure at least a small supply of almost any recognised medicinal product without great difficulty. This result is due to two main causes—namely, the importation of drugs from neutral countries, and the wise and prompt measures taken by the Government in consultation with medical and pharmaceutical authorities to husband the drug supply. In the scheme for conserving our stocks of medicinal products the individual members of the medical profession have played a very useful part, and there is every reason to believe that medical men have loyally coöperated with the professional committee appointed by the Government in August last[1] by acting upon the suggestions made by the committee with regard to the economical prescribing of those drugs which appeared in the earliest stage of the war to be likely to become scarce. It was already foreseen that supplies of such products as the salicylates, the bromides, and potash salts might in due course be insufficient for a normal demand; but since the beginning of August experience has shown that there are other drugs which must be used with economy, while owing to the receipt of consignments of bromides from the United States there does not appear at the moment any need to put these drugs into the same class as the salicylates for example; although it cannot be foreseen whether the imported supplies of bromides will continue indefinitely. Among the drugs of which stocks are now low and difficult to replenish are the following: Carbolic acid, salicylate of soda, salicylic acid, acetylsalicylic acid, salol, novocaine, eucaine hydrochloride, benzamine lactate, atropine, thymol, barbitone, better known under its familiar name of veronal, paraldehyde, phenazone, and phenacetin. These, together with lanolin, constitute a list of drugs which, in the opinion of the medical committee above referred to, should be prescribed with economy, although it is not to be inferred that the drugs named are so scarce that they should be withheld in cases in which they are really needed. The reason for the inclusion of carbolic acid in the list is that it is required for war purposes, but there is not the slightest reason why carbolic acid should not continue to be prescribed as usual for internal administration since the quantity required is extremely small; similarly, weak solutions for gargles and other parallel uses would absorb a comparatively minute quantity of the available stock. When large quantities of disinfectants and antiseptics are required, however, it would be advisable to substitute where possible one or other of the many germicidal preparations of which supplies are plentiful, as, for instance, cresol soap solution. As to salicylic acid and the salicylates, the strictest economy is undoubtedly indicated for the present; there is a probability that supplies of these drugs will be rather more plentiful in due course, but in the meantime stocks are very low. There is, however, such a large consumption of acetylsalicylic acid by people who "doctor" themselves that the economical prescribing of this drug by the medical profession will not be very effective, and it is unfortunate that some reasonable means cannot be devised to prevent the wastage of this product at the present time; it is little use for the medical profession to be economical if the public is extravagant. As regards local anæsthetics, there is a fair supply of cocaine. But even cocaine is becoming scarcer and dearer and should therefore be prescribed economically. The scarcity of atropine is serious, and the present outlook for increased supplies is not hopeful; the shortage is not due to the absence of the raw material, for belladonna root and leaves are perhaps less scarce than they were a short time ago, supplies having arrived from the Balkans. There is still, of course, the hope of further supplies of atropine from neutral countries and of the alkaloid being produced here, but in the meantime the advice of the committee to prescribe it with the strictest regard for economy should be followed. For barbitone some other hypnotic can be substituted in most cases, while there are other antipyretics which can be prescribed instead of phenazone and phenacetin. The scarcity of lanolin is perhaps not very pronounced, as this ointment base is now being made in this country; but other bases can be employed quite successfully, and it is understood that the Germans are using as a substitute soft paraffin with from 5 to 10 per cent. of beeswax. The list of drugs that should be used economically has been recently made the subject of a communication to all medical men; the list is drawn up on sound principles, and if the medical profession continues to coöperate in conserving supplies of the indicated drugs there need be no inconvenience from the cutting off of German supplies.

LOWER DEATH-RATE *V.* LOWER BIRTH-RATE.

THE effect which the war will have in diminishing the birth-rate throughout the kingdom cannot at present be estimated. That it must be considerable admits of no question, and the maintenance of the supply of human beings necessary for the re-establishment of the nation's prosperity is likely to be a source of anxiety to this and coming generations. In this connexion it is pointed out by those interested in the prevention of infant mortality that if little can be done to increase the number of births by causing married couples to realise the importance of bringing children into the world, from the point of view of safeguarding their country's prosperity, much, nevertheless, may be achieved in the direction of protecting those lives of infants which under existing social conditions are sacrificed. The National Association for the Prevention of Infant Mortality and for the Welfare of Infancy has issued its annual report for 1914 from its offices at 4, Tavistock-square, W.C., and will no doubt welcome all accessions to its membership and contributions to its funds. In the *Manchester Guardian* we notice an interesting correspondence has taken place, among the contributors to which have been Lady Selborne and Mr. J. R. Ormerod. The former, quoting from statistics of 1911, gives the rate of deaths in their first year of children born in New Zealand as 58 per 1000, and the rate here as 130 per 1000, and invites us not to waste the lives that we produce. The latter suggests, as a step towards the desired end, the extension of medical benefits under the Insurance Acts to all children. This he regards as a natural sequence to the granting of maternity benefit, which, he observes, needs to be revised and perhaps extended. Subject to the condition that this can be done without exploiting the medical profession, and with the offer of proportionate consideration for increased services rendered, we should say that practical good might result from it. Another possible contribution to the same result is urged in a letter by Dr. Barbara Tchaykovsky, who "feels very strongly that the first step in any baby-saving crusade just now is the immediate placing of the Notification of Births Act on the Statute-book as a compulsory measure throughout the kingdom." This step, Dr. Tchaykovsky believes, would assist the work done by municipal health visiting agencies, voluntary health societies, and kindred organisations, and would tend to help the newly born infant through the first month of life, in which one-third of the present infant mortality occurs. The same writer calls attention to the probability of a large increase in the births of illegitimate children occurring in the neighbourhood of military camps and to the possibility of preventing by sympathetic measures a "veritable slaughter of the innocents." The whole subject, no doubt, is one of great importance, and, moreover, is one which, if it is to be attended to effectively, must be taken in hand without delay, for, as we have observed, the extent to which the numerical increase of the population will be interfered with by the war is now a matter as to which we can only speculate. All that we know is that possibly the next few months will witness slaughter of the flower of the nation's manhood as great as that which has already taken place, and that while we await with bated breath the result of the struggle, we may be able also to do something to mitigate its inevitable and dire consequences.

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[1] THE LANCET, August 22nd, 1914, p. 528.

CONVULSIONS DURING PERTUSSIS: CURE BY PUNCTURE OF THE LATERAL VENTRICLE.

THE following case is reported by Dr. Louis Fischer in the *New York Medical Journal* (1914, vol. c., p. 1054). A baby, aged 8 months, suffered from an ordinary attack of whooping-cough for two weeks, when it began to have both tonic and clonic convulsions. These continued for two days, convulsions recurring at one time every six hours. They were not relieved by injections of chloral hydrate and potassium bromide per rectum. Nor did chloroform anæsthesia afford relief. Lumbar puncture, too, proved unsuccessful. It was decided to aspirate the right ventricle of the brain. The frontal lobe was pierced through the anterior fontanelle, and 22 c.c. of an almost clear cerebrospinal fluid were withdrawn. The convulsions ceased and the baby made a complete recovery. The aspirating needle recommended is 3·2 inches in length, introduced downwards and towards the median line at an angle of about 20 degrees to the depth of about 1·8 inches. The needle then enters the lateral frontal portion of the ventricle.

THE POLICE AND ALLEGED LUNATICS.

A LETTER addressed to the *Times* of April 8th by Mr. Holcombe Ingleby, M.P., is calculated to raise grave doubts as to whether the discretionary powers given to the police by Section 20 of the Lunacy Act, 1890, may not in some respects be wider than the safety of the public and of alleged lunatics demands. At any rate, it should receive consideration from those to whom the treatment of persons supposed to be in the early stages of insanity is a matter of interest. Although there are, no doubt, two sides to the story which Mr. Ingleby has told, with apparent fairness, from one point of view, it is difficult to see how any modification of detail can affect the main points raised by his narrative. To recite briefly the facts of the case, an elderly lady went to Scotland Yard to report her suspicion of the presence of German spies in the neighbourhood of the boarding-house where she lived. The rank of the official with whom she had her interview is not stated, and what took place between them is left to our imagination, but as a result the police then and there arrested the lady and conveyed her to a workhouse, in which institution she was kept until on the third day she was released by the authority of the justice of the peace before whom she was brought, this being within the limit of time prescribed by the Act. The Chief Commissioner, in a letter written to the lady after her release, said, "Of course, inquiry shows that this (the removal to the workhouse) was wholly unnecessary, and I need hardly say how greatly I regret the inconvenience and distress of mind caused to you by the action of one of my officers." The Chief Commissioner has also authorised the statement that the police officials acted in strict accordance with their duty as laid down by the law, as well as with consideration and kindness towards the lady, and that Mr. Ingleby's statement of the case was not in accord in all particulars with the facts as known to himself. It appears from Mr. Ingleby's letter that no legal action is likely to be taken by the lady, further particulars of whose adventure will be found in the document referred to. Possibly it might be difficult for her to recover damages. Section 20, referred to above, under which, presumably, the police acted, provides that: "If a constable, relieving officer, or overseer is satisfied that it is necessary for the public safety or the welfare of an alleged lunatic with regard to whom it is his duty to take any proceedings under this Act that the alleged lunatic should before any such proceedings can be taken be placed under care and control, the constable, relieving officer, or overseer may remove the alleged lunatic to the workhouse of the union where the alleged lunatic is, and the master of the workhouse shall ...... receive and relieve, and detain the alleged lunatic therein, but no person shall be so detained for more than three days, and before the expiration of that time the constable, relieving officer, or overseer shall take such proceedings with regard to the alleged lunatic as are required by this Act." Apparently this section was complied with; it does not say that it is the duty of the officer to take reasonable care to satisfy himself that it is necessary to remove the alleged lunatic; as long as he is himself satisfied that is enough.[1] There is no obligation or recommendation to call in a medical practitioner, and, indeed, to do so does not relieve the officer of his responsibility.[2] It would appear, then, that the police in this matter acted strictly in accordance with the law, as the Chief Commissioner claims that they did. At the same time, with the passage above quoted from Sir Edward Henry's letter to the lady before us, we are driven to the conclusion that a somewhat marked lack of sound judgment and discretion was exhibited at Scotland Yard, where, if anywhere in the United Kingdom, "the constable" might be expected to display judgment and discretion, or to have access to higher authorities for the direction of his actions. Further, if information was given of her predicament to the lady's relatives or friends, it only had the effect of bringing them to the workhouse on the third day. Mr. Ingleby seems to be of the opinion that there was undue delay in communicating with them, and we must remember that in London communication can usually be made both easily and rapidly if desired. As a result, therefore, of the police taking steps, authorised by the law, and taken by them, no doubt, with the best intentions possible, a lady, probably not in robust health, who may have suffered from an exaggerated apprehension with regard to German spies, but who hardly on that account alone could have been dangerous to herself or to the public, suffered 52 hours' confinement as a pauper lunatic. The medical man who attended her in the workhouse did not, it is stated, regard her as insane, but had no power to order her release; and in due course the magistrate, who, acting in strict accordance with the law, seems to make a practice of attending every three days at the workhouse in question, put an end to a situation which ought never to have arisen. Why there should be no provision for the summoning of a medical man at the earliest possible moment to decide what in some cases may be a simple question, but may in many instances be beyond the scope of the intelligence and training of a constable, relieving officer, or overseer, is by no means plain. The law as it stands may afford a convenient and effective means for placing promptly under observation or control cases brought to the notice of the police; but the law would be strengthened not weakened in its effectiveness if the calling in of a medical practitioner, whenever this was possible, were also enjoined, so as to shift the responsibility to the shoulders best adapted for the burden.

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[1] See Harward *v.* Hackney Union, 14 T.L.R. 306.

[2] See Thompson *v.* Schmidt, 8 T.L.R. 120.

PLASTIC TRACHEITIS AND BRONCHITIS.

IN the *Medical Journal of Australia* of Feb. 13th Dr. H. Laurie and Dr. H. C. Colville have reported a case of a very rare condition—plastic tracheitis and bronchitis. A married woman, aged 45 years, was taken to the Alfred Hospital, Sydney, with the diagnosis of œdema of the glottis due to chronic nephritis. She was of stout build and was suffering from urgent dyspnœa accompanied by marked whistling stridor. There were cyanosis and retraction of the neck and intercostal spaces. Preparations were made for tracheotomy, but she improved slightly. Her colour returned and the retraction diminished, although the whistling stridor was still marked. A more thorough investigation was then made. The patient had been well until a week before admission when she contracted a "bad cough." This got worse until three days before, when the dyspnœa began. She had always been healthy except for an attack of rheumatism in the previous winter. The temperature was 99° F. and the pulse 100. The heart sounds were inaudible. No adventitious sounds could be detected over the lungs. The vesicular murmur was very weak. The point of maximum intensity of the stridor was over the manubrium sterni and not over the larynx, as would have been expected in œdema of the glottis. Pulv. jalapæ co. was given, and six leeches, followed by a hot pack, were applied to the front of the neck. The patient's condition remained much the same for four hours, and then, in a severe spell of coughing, a blood-stained cylindrical cast about 2 in. long and nearly ¾ in. in diameter was expelled. It appeared to have been formed in the trachea. The dyspnœa at once improved. The question of diphtheria immediately arose. A swab was taken from the throat and found to contain a pure culture of Hoffmann's bacillus. The breathing continued to improve, and on the following night a similar cast was expelled, consisting of a complete mould of the trachea and right and left bronchi. Further improvement followed and the patient could speak in a whisper. During the next few days small fragments of similar membrane were coughed up and rhonchi were heard over the front of the right lung near its root. The expectoration for several days was profuse and at first blood-stained. The voice gradually returned, and the patient was discharged ten days after admission feeling well except for a little huskiness and a slight cough. In plastic bronchitis, according to Dr. William Ewart, the condition is confined to the smaller bronchi—"from the tubes of the diameter of a goose-quill (rarely of much larger size) down to the finest ramifications." In this case the trachea, both main bronchi, and the larger tubes on the right side were affected. The smaller bronchi and bronchioles were absolutely free.

TRANSFERENCE OF THE HUTCHINSON MUSEUM TO AMERICA.

THE closing of the Polyclinic has been followed by the acquisition of the Hutchinson Museum by the Johns Hopkins Medical School. The loss to this country of the remarkable and unique collection of original drawings, coloured plates, and photographs, which represent the life-work of one of the greatest clinicians of the age, is to be deplored. Though the value of drawings has been recognised since the earliest times of clinical study, excepting the splendid collection of wax models at the St. Louis Hospital, Paris, no previous attempt had been made to illustrate systematically the appearances of disease in the living subject. No practising surgeon has approached Sir Jonathan Hutchinson in the number of types of disease he observed, described, and, whenever possible, illustrated pictorially. In the opening address delivered at the Polyclinic in 1900 on Post-Graduate Study,[1] Sir William Osler said of him: "He is the only great generalised specialist which the profession has produced, and his works are a storehouse upon which the surgeon, the physician, the neurologist, the dermatologist, and other specialists freely draw." The collection consists of: (1) Original coloured drawings, of which there are many hundreds; (2) coloured plates taken from atlases, books, and memoirs; (3) engravings, woodcuts, photographs, and pencil sketches, very often with the letterpress or manuscript notes attached. They illustrate the whole range of medicine and surgery, but particularly the life work of the collector in syphilis and skin diseases. It is "probably the most remarkable iconography on syphilis ever made." Taken at random, the labels on some of the rarer items show the minuteness with which this protean disease is illustrated: circumcision chancres, syphilitic herpes, recurrent chancres, vaccination syphilis, keloid. While regretting the loss to our country of this valuable and unique collection, we are pleased that it has found a home in the most famous of the American medical schools where, perhaps, it may be put to greater use than here, as the teaching which it embodies must be less familiar, but those who have had the pleasure of seeing the remarkable and enthusiastic man who made this collection employ it in teaching will feel that in its demonstration there will be one irreparable loss. However rare the case sent to Hutchinson he could parallel it from his collection of portraits, and from the vast storehouse of a most tenacious memory relate histories. For the conventional labelling of a malady with a name, which is called diagnosis, he had almost a contempt. His plan was to take type cases, to describe them in detail, to illustrate them whenever possible by drawings, and to place similar cases beside them. His object always was to discover causes rather than to name. With all this minuteness he combined a wide and bold philosophic grasp. No clinician ever focused light from so many sources on a subject. From the rare case he passed to the other rare cases of the same kind in his knowledge, then perhaps he passed to another field of disease, regarded as entirely different and showed analogies unsuspected, or he passed to the ordinary and showed that it and the extraordinary were only phases of the same process. Or, moving still more widely, he illuminated the subject by an illustration from plant pathology or from ordinary life or by a quotation from the poets.

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[1] THE LANCET, June 12th, 1900, p. 73.

PUNCTURE OF THE CORPUS CALLOSUM AS A DECOMPRESSIVE MEASURE.

The ordinary results of temporal decompression for brain tumour are only partially satisfactory; it is suggested that only 10 per cent. of such cases are operated upon with success. There are especially to be considered in these cases the extremely severe headaches and vomiting which form such distressing features, and any measure which can relieve these symptoms must be welcomed, whether or not such a procedure is associated with more extensive proceedings directed to the tumour mass itself. An operation of this nature has been practised with considerable success; it consists in puncture of the corpus callosum, and the technique is not held to be very difficult. It has for its object the relief of tension in the ventricles in the brain, a condition which is held to be largely responsible for the symptoms—a condition, in fact, allied to internal hydrocephalus present in many cases of brain tumour. Such relief is effected by allowing communication between the ventricles and the subdural space superior to the corpus callosum. Dr. Elsberg, discussing his results at a meeting of the American Neurological Association on May 7th, 1914,[1] stated that he had had 30 cases, and in more than half of them the general symptoms had been markedly relieved by the operation. No matter what the pressure conditions within the skull the operation did good. Where, however, there was no internal hydrocephalus the procedure was useless. He also stated that radical removal of the tumour should be done wherever possible; decompression has its field as a temporising method or in non-removable or non-localisable intracranial neoplasms. As regards the dangers of the operation, these are not great. He quotes von Brahmann as having done 57 operations without any ill effect, and Dr. Elsberg himself had done 39 without mortality. Further results by more observers will be awaited with interest.

Parliament resumed sitting on Wednesday, April 14th.

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[1] Journal of Nervous and Mental Diseases, 1914, vol. xli., p. 726.

The late Augustus William Dalby, L.R.C.P., L.R.C.S. Edin.—Mr. Dalby, a highly respected medical practitioner at Frome, Somerset, died recently at Weymouth. After qualifying as L.R.C.P. and L.R.C.S. Edin. in 1884, he commenced practice in Frome, and was for many years medical officer of health for the Frome rural district. He was an enthusiastic Volunteer, and was lieutenant-colonel of the 2nd South-Western Mounted Brigade Field Ambulance.

PUBLIC HEALTH OFFICERS AND THE WAR.

The question of granting leave of absence to medical officers of health, assistant medical officers of health, medical officers of isolation hospitals, and tuberculosis officers, who have obtained the permission of their councils to accept temporary appointments in the army, is one that has exercised many of the officers concerned and their authorities, and frequent allusions to it have appeared in our columns. We have made inquiries as to the practice of the Local Government Board in giving permission to the officers to take such leave of absence, and the attitude of the Board will be clearly seen by what follows.

The Local Government Board sent the following circular letter to the county councils and sanitary authorities on August 12th last:—

> Local Government Board, Whitehall, S.W.,
> 12th August, 1914.
>
> Sir,—The Local Government Board wish to draw the attention of local authorities to the great importance of maintaining the efficiency of the sanitary service of the country at the present time. In many areas the medical officers of health and other officers engaged in public health work will be giving their services to the navy or army, and it will be necessary for the local authority to make other arrangements for carrying on their work. It is essential that there should be no relaxation of the activities of local authorities in the prevention and control of epidemic diseases, the protection of water-supplies from contamination, and the promotion of child-welfare, and in securing the wholesomeness of food-supplies and the general sanitary condition of each area. On this account it is important that all vacancies in the minor sanitary staff should be filled up.
>
> The actual steps which may be open to local authorities to replace medical officers of health who are absent on naval or military duty will vary in different districts. In many areas adequate temporary arrangements may be made by coöperation between the county and district authorities or between neighbouring district authorities. The Board will be glad to be informed of each case in which a medical officer of health or chief sanitary inspector or inspector of nuisances has been given leave of absence for naval and military service, and of the steps taken to arrange for the temporary discharge of his duties.
>
> I am, Sir, your obedient Servant,
> (Signed) H. C. Monro, Secretary.

Since then nearly 100 whole-time medical officers of health out of a total of 314 have, with the consent of their councils and of the Board, taken temporary commissions in the Royal Army Medical Corps. About the same number of part-time medical officers of health and many medical men holding other posts under county councils and sanitary authorities have also given their services to the army. Each application to the War Office from a medical officer employed by a local authority is, in accordance with an arrangement made between the two departments, referred to the Local Government Board as to whether the medical officer making the application can properly be spared from his civil duties. So far it has not been necessary for the Board to object to the granting of a temporary commission to any medical officer who has applied, as in each case temporary arrangements have been made for carrying on the officer's work.

From the beginning of the war local authorities and their sanitary officials have rendered valuable assistance to the military authorities which the Army Council have acknowledged in the following letter from the Assistant Secretary to the Army Council, which appears in a circular issued by the Local Government Board this week to county councils, sanitary authorities, port sanitary authorities, and medical officers of health, an abstract of which will be found on p. 833 of this issue of THE LANCET:—

War Office, London, S.W., March 25th, 1915.

SIR,—I am commanded by the Army Council to inform you that they have had under consideration the assistance which local public health authorities, under the guidance of the Local Government Board, have rendered since the outbreak of the war to troops stationed in their administrative areas. They are of opinion that this assistance in the unexampled circumstances of the last eight months has been invaluable in safeguarding the health of the forces and in preventing the spread of infectious disease to an extent which would have been otherwise impracticable, and I am to ask that the Local Government Board will be so good as to convey to the councils of the counties, boroughs, and sanitary districts concerned the thanks of the Army Council for the work thus undertaken. I am in particular to refer to the valuable services which have been given by medical officers of health, sanitary inspectors, and other officials of the local authorities in coöperating with the army sanitary service.

The Army Council trust that during the coming summer months they may continue to secure the assistance, advice, and coöperation of these authorities and their expert officers, under the general supervision of the Board's medical inspectors, with a view to maintaining the present favourable record as to disease among troops stationed in camps and billets in the United Kingdom.

I am, Sir, your obedient Servant,
(Signed) B. B. CUBITT.

The Secretary, Local Government Board, Whitehall, S.W.

The Army Council concur with the Board in attaching great importance to the action taken by sanitary authorities and their officers in safeguarding the health of the forces and in preventing the spread of infectious disease, and they regard the action taken by sanitary authorities as an integral part of the precautionary measures necessary to protect the health of the troops at home. The Board are of opinion that serious risk of calamity would be involved if, during the coming months, sanitary authorities were to relax their efforts or were unable to take the necessary action because they are inadequately staffed or have only inexperienced officers.

Subject to these considerations the Board are assenting to proposals for medical officers to take service in the army whenever this can safely be done. The Board have accepted temporary arrangements whereby the services of a senior practitioner are substituted for those of a junior medical officer both for sanitary and for hospital work. The tuberculosis organisation in each county and county borough is largely concerned with the treatment of sick persons, and some arrangement must be made for carrying it on. There should therefore be, in every such area, a tuberculosis officer available to advise both the Council and the Insurance Committee for the area. As a rule it is not desirable that both the medical officer of health and the tuberculosis officer shall be absent from their duties. Where local authorities have given their officers leave of absence they have almost invariably done so on such terms as not to involve them in any financial loss or other disadvantage.

INFANT MORTALITY IN SOMERSET.—At the last meeting of the Somerset county council the medical officer of health, Dr. W. G. Savage, stated that during the past ten years the death-rate in the rural districts was 75·9 per 1000 of children under 1 year of age, and in urban districts 90·8, a low rate compared with the rate in the country generally.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Edinburgh University Graduation Ceremony.

A GRADUATION ceremony in connexion with the University of Edinburgh was held on March 30th in the McEwan Hall, when the degrees were conferred by Principal Sir William Turner. The usual boisterous note of the students was lacking, the reason for the quiet and subdued nature of the proceedings being indicated, no doubt, by the presence among the graduates of a large number wearing His Majesty's uniform. For a spring graduation the numbers "capped" was unusually large. Sir William Turner, in his address to the graduates, said their ceremony that day was marked by an important difference from the ordinary graduation ceremonies which had been formerly held—the predominance of the military element. Not only were many of the graduates in uniform, but degrees had been conferred upon other graduates *in absentia* because the recipients of the degrees were either at the front or were otherwise engaged in the forces on active service. That was not the only point of interest, however, for the number of graduates at this season of the year was above the average, because the Senatus, acting, he might say, on behalf of the nation, had given opportunities to students to present themselves for graduation at this time instead of asking them to wait until the ordinary summer graduation. In giving this special privilege, the students had to show themselves in their examinations worthy of that special privilege. That was to say, the graduate must have attended all the courses of instruction before appearing for the degree, and had to pass, also, the examination with credit to himself and to the University. It was important that the public outside should know what had been done. How the war had reacted upon the academic life was evident from the fact that the University had had to part with about 1000 of its male students. The University had lost largely in its income, and more than 2000 of its students, graduates, and staff had joined the forces in one capacity or another. The University had been called upon to participate in a great national movement, and they owed a great deal to the Officers Training Corps, which was under the direct charge of a military committee of the University, having the sanction of the War Office. In this connexion he desired to look back as far as the year 1859, when there was a great national movement in connexion with a possible invasion. The nation was then stirred to resolve itself into a series of volunteer corps, and the students of to-day were doing only what their predecessors had done in 1859. The students of that day entered into the task with as much enthusiasm as the men of to-day, and the University students formed themselves into what was known as No. 4 Company, the great Edinburgh Battalion. He was a member of that company and a volunteer, and having served for 30 years in it he passed through the various grades of rank from the lowest which was then known as "ensign," now an obsolete rank. He claimed the Officers Training Corps as the direct descendant of No. 4 Company, for, if he was right in his recollections, the old volunteer company of the University was not disbanded when the disbandment of the volunteers took place under the new War Office régime, but was continued as the corps to which many of the students now belonged.

Drink and the War: Public Opinion in Edinburgh.

Edinburgh is not an industrial centre in the accepted sense of the term, and is not to any extent concerned in the production of munitions of war. Nevertheless, by reason of the fact that it is one of the leading brewing centres in the country, the proposed prohibition of the drink traffic, consequent on the state of affairs in the ship-building and other industrial areas, has for it a very special interest. It goes almost without saying that the licensed trade is strongly and unanimously against any measure of the kind that have been indicated. There is, in their opinion, no call for any such drastic action in Edinburgh, and naturally they do not care to distinguish between their own district and such areas as Clydeside. It is stated that drunkenness in the city, judged in the light of police statistics, is below the normal. While the majority of the opinions of those not directly concerned in the liquor trade appear to favour prohibition, there was an important section against any proposal of the kind. One leading public man declared that in his opinion this merely represented the thin edge of the wedge. "We are told," he said, "that this is to be only for the time being, but I am confident that an attempt will be made to make the prohibition a permanent thing. Experience abroad, and especially in America, has been that you get more drunkenness in the prohibitionist States than anywhere else." Another prominent citizen declared that his position was briefly this—to have a total prohibition of all spirituous liquors, such as whisky, brandy, and gin, but to make no such regulations regarding beer. It was his opinion that the riveters and men engaged in similar work must have drink of some kind, and he did not think the drinking of beer would in any way interfere with the work of production. He was convinced, however, that for such measures to be in the least efficacious they must be universal, applying to clubs no less than to public-houses. An interesting corroboration of his point of view was furnished by the head of one of the largest manufacturing firms in the district. The question of the stoppage of the whisky traffic was discussed at a soirée which was held by the employees, and the managing director was so much struck by the point of view which the men indicated that he there and then proposed that they should have a referendum on the subject. The ballot was secret, and the result was a vote of 90 per cent. in favour of prohibition of whisky until the war is over. The question of beer-drinking was not voted on. The men's views were admirably summed up by one of their speakers in the following manner: "The immediate completion of the war or its prolongation evidently now means a question between efficiency and inefficiency. If drink means inefficiency then drink must be stopped."

Views of Edinburgh Medical Men on the Drink Question.

From a number of interviews with medical men in Edinburgh representative opinions were obtained in regard to the effect of drink on the general efficiency of the worker. A prominent panel practitioner said that there had not been much increase in drinking during the war among working men, but he had observed that there had been a considerable increase in the consumption of liquor among a certain class of women in receipt of war money. "Edinburgh is not," he remarked, "like places in the west country with their big ship-building yards and engineering works. I would not say that men in Edinburgh are drinking more than they were before." Another leading medical man thought that as a rule long hours were not responsible for increased drinking among the workers. If a man got occasional or intermittent extra long hours he might find that drink would help him along, but if he were working a few extra hours a day regularly, provided he used his spare time with discretion, he did not find the necessity for a stimulant. It was more likely that extra wages had made some of the workers more prodigal of their money. He thought that there was no question that the medical profession would favour prohibition. Another practitioner, who at present has a panel list on which there are about 2000 names, said that he had only just come across his first case of a man being laid up through nervous strain, brought on by overwork since the beginning of the war. He did not believe for a moment that extra work was knocking down workers. With fair rest a man could get along nicely working 12 hours a day. Long hours, in his opinion, did not directly induce drinking. From his experience the war had not increased the incidence of drinking. He also mentioned the interesting fact that there had been less illness among the poor. He had the duty of examining applicants for parish outdoor relief in his district, and for the last month the number was 8, compared with 16 last year. There was more work, and they either did not bother about medical attention or the fact of being at work kept them well. A medical man with a large practice among the working-class population in the western district of the city said it had not been noticed that there had been any increase in drinking among the workers in the city since the outbreak of war. Work, and plenty of it, he believed to be one of the greatest aids to sobriety and good living. He was of opinion that total prohibition would be a mistake. Civilisation was not sufficiently far advanced at the present day to permit of that. If drinking was stopped altogether he thought the result would simply be that the evil tendencies of the worst elements of the population would break out in another direction, with probably the direst consequences. His own idea was that a much better plan would be for the Government to prohibit all strong drink, such as whisky, rum, and brandy, and permit the sale and consumption of beers of a very light alcoholic strength, and wines.

Edinburgh Royal Maternity and Simpson Memorial Hospital.

Dr. James Haig Ferguson has succeeded Dr. F. W. N. Haultain as physician on duty, and Dr. George F. Barbour Simpson has succeeded Dr. J. Lamond Lackie as assistant physician, both for the quarter to June 30th, 1915.

April 12th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Honorary Degrees at the National University.

HONORARY degrees were conferred by the Senate of the National University at its last meeting under unusual but distinctly interesting circumstances. Some 60 years ago there was founded in Dublin, under the rectorship of John Henry Newman, the Catholic University of Ireland; it consisted of several faculties, including medicine, but not having a charter it had no power to confer degrees. The Senate of the National University, considering the position of the past students of the Catholic University, conferred honorary degrees upon many who "having during their student days, for conscientious reasons, refrained from attending institutions where they could have obtained university degrees, and in place thereof having resorted to the Catholic University, which was unable to grant them that privilege." Among those who received degrees were the following medical men:—

LL.D. (*Honoris Causa*).—Lieutenant-Colonel John Joseph Crean, A.M.S.; Mr. George Unthank Macnamara; Surgeon-General Thomas Maunsell, C.B.; Dr. Joseph Francis O'Carroll; and Colonel James Patrick Rooney, R.A.M.C. *In absentia:* Mr. Nicholas Thomas Connolly; Right Hon. Michael Francis Cox, M.D.; Mr. William Creagh; Surgeon-General Sir Charles MacDonagh Cuffe, K.C.B.; Lieutenant-Colonel Charles Boromeo Jennings, A.M.S.; Lieutenant-Colonel Ignatius O'Farrell, A.M.S.; and Major Patrick Walter Stafford, A.M.S.

M.D. (*Honoris Causa*).—Mr. Thomas Joseph Crean, Mr. Nicholas Furlong, Mr. Thomas Laffan, Mr. John M'Cullagh, Mr. Charles Stennett Redmond, Sir Joseph Michael Redmond, Mr. Charles O'Lomasny Ronayne, Mr. John Ryan, and Mr. Denis Walshe. *In absentia:* Mr. Richard Cannon, Mr. Matthew Kearney, Mr. John Kilbride, Mr. Charles William M'Carthy, Mr. Constantine Joseph MacGuire, Mr. Thomas M'Kenna, Mr. Daniel Aloysius O'Sullivan, Mr. Joseph Quirke, Mr. James Patrick Ryan, and Mr. Edward Aloysius Stephenson.

Royal College of Physicians of Ireland.

At the last meeting of the Royal College of Physicians of Ireland Dr. J. J. Gannon was elected a Fellow of the College.

Cerebro-spinal Meningitis.

Since Dec. 8th, 1914, up to and inclusive of April 10th, 1915 (when 4 new cases were admitted), 47 patients were received into Purdysburn Municipal Fever Hospital, Belfast, with cerebro-spinal meningitis; while 3 were treated in the surrounding districts. Of these 50 cases of cerebro-spinal fever 10 have died, which gives a mortality of a little over 22 per cent. These cases have been treated with three varieties of serum—i.e., Flexner's, from the Rockefeller Institute, New York, Dopter's, from the Pasteur Institute, Paris, and Mulford's, from Philadelphia. It is too soon to give any opinion as to which of these serums affords the best results, though there seems to be a preference among practitioners for Flexner's. From the experience at Purdysburn Hospital it is clear that when serum is used within the first 24 hours of the onset of the disease infinitely better results are obtained; and, further, in cases in which the serum was used early recovery has taken place, even when within less than a day from the beginning of the attack the patient was covered with a petechial rash, and when on lumbar puncture the cerebro-spinal fluid was found to be purulent. It is therefore more prudent to risk sending a patient into hospital on a mistaken diagnosis than to wait for certainty, thereby depreciating the results of serum-therapy.

The late Samuel Hamilton, M.D. R.U.I.

Dr. Samuel Hamilton died suddenly, from angina pectoris, on April 4th, at his residence, Ballynahinch, co. Down. A sudden strain about a year ago warned him that his heart was not strong, and he thereupon gave up night work, but otherwise continued at work until two days before his death, when he developed a severe cold, during which two attacks of angina, the last a fatal one, occurred. Dr. Hamilton, who was a native of Dromara, studied at Queen's College, Belfast, where he graduated as M.D., M.Ch., of the Royal University in 1882, and M.A.O. in 1885, and was noted as an athlete. He settled in practice in Ballynahinch in his native district, where by his cheery manner and professional skill he obtained a large practice, and was greatly liked. In 1891 he married a daughter of Professor Witheron, D.D., of Londonderry, who, with two sons—one of whom is a lieutenant in the R.A.M.C.—survive him. Dr. Hamilton was buried in Dromara on April 6th.

Richard Crossett, L.R.C.P. & S. Edin.

The death is announced at his residence, Cookstown, co. Tyrone, of Mr. Richard Crossett, after a prolonged illness. A native of Londonderry, Mr. Crossett studied at Queen's College, Belfast, and in 1876 became a Licentiate of the Royal College of Physicians and Surgeons of Edinburgh. Forty years ago he began practice in Moneymore, but soon afterwards he removed to Cookstown, where he built up a large practice and where he has resided ever since. In addition to leading a busy professional life, he took his share in the public business of Cookstown, where for a time he was a town commissioner and for upwards of 30 years he was consulting sanitary officer of the Cookstown union. He retired from active practice four years ago.

April 12th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Vaccine Treatment of Leprosy in India.

VACCINE for the treatment of leprosy, prepared from the streptothrix isolated by Major T. S. Beauchamp Williams, I.M.S., has been supplied by the Bombay Bacteriological Laboratory to various parts of India and other parts of the world. Owing to the slow progress of the disease, the recurring attacks of fever with extension of the leprosy lesion, and the periods of remission and temporary improvement even in untreated cases, it is difficult to arrive at any conclusion as to the usefulness of the vaccine as a method of treatment. Generally speaking, it may be said that some cases appear to improve under treatment, some remain stationary, while others show no improvement at all. A report by Major J. R. J. Tyrrell, I.M.S., Nowgong, shows that he had nine cases under treatment long enough to test the vaccine. Seven improved by treatment, while two showed slight, if any, change. None were any worse, and one had been under treatment for 10 months, one for eight, one for seven, two for four, two for three, and two for two months.

Plague in the Punjab: Iodine in the Treatment of Plague.

The plague returns for the month of February show that 23,389 deaths were reported in the province of the Punjab during the month, the weekly returns having been, Feb. 6th, 4492; Feb. 13th, 5285; Feb. 20th, 7798; and Feb. 27th, 5814. A decrease was thus disclosing itself at the end of the month, but throughout the period practically all parts of the province were affected.

The last report of the Bombay Bacteriological Laboratory includes an account of experiments made to test the efficiency of the treatment of plague cases by tincture of iodine. Some of the cases were treated by giving five drops of tincture of iodine every three hours by the mouth, while iodine was applied locally to the buboes. Others were treated by injecting seven minims of the tincture in saline solution intravenously once every 24 hours as recommended by Captain F. Powell Connor, I.M.S. A set of control cases were treated by the method ordinarily adopted by Dr. Choksey at the Mahratta Plague Hospital. Excluding the cases with many plague bacilli in their blood before treatment was commenced, there were 4 recoveries out of 9 cases among the control cases, 8 recoveries out of 12 cases treated by iodine by the mouth, and 3 recoveries out of 10 cases treated by iodine intravenously injected, the number of cases treated not being sufficiently large to allow definite conclusions to be drawn.

The Abuse of Cocaine in India: the Effect of the War.

Stewards and seamen of the Austrian-Lloyd boats have played a prominent rôle in the illicit trade in cocaine. The profits ensured to successful smugglers and retailers are far in excess of those accruing from dealings in any other form of intoxicant, for victims of the cocaine habit are prepared to pay extravagant prices for the gratification of their desires. Under the most favourable circumstances the supply is limited and fluctuating. The demand, on the other hand, is certain and constant, and hence prices are liable to violent fluctuations. A few years ago, when the Punjab Government followed the example of other provincial administrations and included cocaine in the list of prohibited intoxicants, an immediate and abnormal rise in prices ensued all over India. The supply had been cut off at one of its few remaining sources and retailers were as yet uncertain as to the success that would attend their smuggling projects. When achievement outstripped anticipation the prices fell. The war may be expected to reproduce these conditions in a more exaggerated form, even if it has not already done so. Communications with the old supplying firms have ceased, and many of the erstwhile smugglers are either fighting for their country or interned in foreign ports. New sources have to be discovered and new agents have to be engaged. In the meantime, the cocaine devotee will be put to many shifts to obtain his dose of injection. His field of inquiry will be enlarged and his chances of discovery proportionately increased. So also with the retailer. The certain prospect of enormous profits will tempt him to relax a little of his customary caution. He will approach every available source of supply, not forgetting the Government stocks. There may be a revival of direct negotiations with wholesale chemists, British and French firms taking the place of German and Austrian. Cocaine will be sent in a large consignment of other drugs under a false label, and invoices will be so manipulated as to deceive the Customs. Such methods are difficult to detect, but with a temporary depression in sea-borne trade the Customs establishment should be able to devote greater attention to the examination of consignments from doubtful firms to suspected consignees. The situation is thus peculiarly favourable to a repressive policy, and active coöperation between the Excise and Customs departments in all parts of India should lead to excellent results. If the Indian Government now fails to initiate a vigorous anti-cocaine campaign it may anticipate a progressive increase in the consumption of this dangerous poison as soon as normal conditions are re-established.

The Health of Bombay.

In his survey of the health of the city during the last year the executive health officer of Bombay comments on the improved health conditions in the city as portrayed in the decreased mortality from all causes, but reminds the corporation that in order still further to improve upon these results more consideration should be given to sanitary improvements that have been suggested. In times of epidemic the schemes for improvement of sanitary conditions in the city were readily enough sanctioned, but when health conditions were approaching those of a Western city the necessity for persisting in sanitary reform was apt to be lost sight of. He emphasises the fact that the steady decrease in mortality is not due to the outlay of large sums in sanitary improvement, for during the last 14 years no large outlay has been undertaken in Bombay. He refers in particular to insanitary areas in the city, regarding which a scheme of reform was presented to the corporation ten years ago, and if this scheme had been carried out and the areas improved, reduction in the mortality rate would have been more marked, the work of the health department would have been greatly facilitated, and the condition of the city would have been very much improved. Satisfactory as it may be to look back on the steady decline in mortality, in spite of many difficulties, it would have been more satisfactory to feel that alongside the work that has been done in organising, supervising, and controlling the public health administration of Bombay something substantial and permanent had been effected so as to maintain the position arrived at and create a lasting improvement in the public health of the city.

March 20th.

THE HEALTH OF THE NAVY IN 1913.

THE report on the health of the Royal Navy for 1913 is somewhat shorter than usual, owing to the absence of any original articles on professional subjects by medical officers; these are intended to be published in a naval medical journal, to be issued quarterly. There is also a general compression of material, on account of the mobilisation that took place in August last, when the report was being prepared.

Satisfactory Health Condition of the Navy.

The returns again show a continuous and satisfactory improvement. The total strength for the year 1913 was 126,830, an increase of 7290 over that for the previous year. Of this number, 103,730 were serving either in the Home Fleet or on the Home Station; the remaining 23,100 being distributed among the seven fleets and squadrons serving abroad. For the total force the ratio of sickness has been 610·5 cases per 1000 of strength, a considerable improvement compared with the ratio for the preceding five years 1908–12, which was 656·6. The average number of men daily on the sick list has been 23·79 per 1000, compared with 26·97; the deaths have been 3·24, compared with 3·23; and the final invalidings 13·53, compared with 16·23 per 1000. All of these ratios are also below those of the preceding year. The highest admission ratio was, as usual, on the East Indies Station, 998 per 1000. This was higher than the quinquennial ratio of 971 for 1908–12, and also higher than the ratio for 1912, which was 948. The death ratio on this station (10·8 per 1000) was also higher than the quinquennial ratio (9·25) and the ratio for 1912 (5·55). The highest ratio of daily sick in hospital, 33·27, also occurred on the East Indies Station, a rather lower figure than that for 1912, which was 33·51, but still much higher than the quinquennial average of 29·06. Next come the Home

Station with 28·59 per 1000 daily sick, and the Irregular List with 27·94. The healthiest command was the Mediterranean, with a ratio of 20·21 daily sick, the Home Fleet being nearly as healthy with 20·66, and the West Atlantic and Fourth Cruiser Squadron (formerly known as the North America and West Indies and Training Squadron) with 20·73 per 1000. The Home Station (consisting of depôts and training ships and hospitals) daily sick ratio of 28·59 was an improvement on the quinquennial average of 35·26 per 1000.

The most numerous admissions to hospital were, as usual, for diseases of the digestive system, in the ratio of 107 per 1000. Venereal diseases caused 93 admissions per 1000, a considerable improvement on the quinquennial average of 116, the chief reduction being in the prevalence of secondary syphilis. Of the most important diseases, pneumonia was the only one that showed a slight increase, 4·69, compared with 4·21 admissions per 1000. Malaria (3·5) and tuberculosis (1·93) were well below the quinquennial averages. There were only 4 cases of Mediterranean fever throughout the whole navy, with no death. The most fatal diseases were pneumonia (38 deaths), tuberculosis (34), enteric fever (31), and organic disease of the heart (21). The respective ratios, 0·29, 0·26, 0·24, and 0·16 per 1000, were slightly higher than the averages for tuberculosis and enteric fever, slightly lower for pneumonia and heart disease. The chief causes of invaliding were heart disease (2·07 per 1000), nervous diseases (1·76), and tuberculosis (1·64), showing slight reductions on the respective quinquennial averages.

Prevalence of the Chief Diseases.

Small-pox is thus referred to, on the *lucus a non lucendo* principle; it did not prevail anywhere. Only 5 cases occurred; 3 of these were on board the *Conqueror* at Devonport. The first was a man who had been on leave shortly before; all were mild cases, being modified by previous vaccination. One case occurred at Port Said and 1 at Shanghai; these also were mild cases, for the same reason. On each occasion the ship's company were revaccinated. No spread of the disease occurred in spite of the unavoidable close contact with the rest of the crew. Influenza (1324 cases) showed a continued reduction on previous years. It was of mild type, chiefly in the Home Fleet and Home Station and on the Australian Station; only one death occurred, owing to pneumonia. A few cases were admitted in all the commands, except at the Cape. There were 414 cases of scarlet fever, of which 321 were on the Home Station. Outbreaks occurred on the *Powerful* (94), the *Impregnable* (86), and at the Youths' Training Establishment (47). The origin was not traceable in either instance. The general character of the disease was mild, but cardiac failure caused death in 5 cases. Extensive epidemics of mumps are reported in the Plymouth training ships and establishments and elsewhere. Not only boys were affected, but on several ships many cases also occurred among stokers, especially on the *Vivid* and *Victory*.

There were 123 cases of diphtheria, with 5 deaths; 105 of these cases and all the deaths occurred on the Home Station. An outbreak of 33 cases on the *Impregnable* was due in the first instance to a boy who contracted the disease when on leave. Cases continued to appear from January until September, all among the boys, and it is regarded as probable that there were several separate infections. If this was the case it seems strange that effective measures were not taken to prevent spread of infection time after time. On the *Ganges* there were 18 cases and on the *Powerful* 11 cases, also considered to have been sporadic, having "apparently occurred at intervals throughout the year." Of 8 cases on the *Victory* 4 occurred amongst cooks' mates who slept in the same room; some explanation of this, with dates of onset, might have been afforded. Eight cases of cerebro-spinal fever were admitted, 4 being returned from the *Victory;* 2 occurred in March among stokers, the other 2 (a boy and a stoker) in April and May; in 3 of the cases no growth could be obtained from lumbar puncture. Two cases were reported from the *Pembroke* among stokers in April and May. Two other solitary cases were returned, one from the *Centurion*, the other from the *King George V*. Nothing could be traced as to source or mode of infection.

Enteric fever caused 123 admissions and 31 deaths; 34 cases were on the Home Station, 16 being from the *Vivid*, appearing at intervals. No source of infection was traced. For several years this ship, which is stationed at Plymouth, has had a heavy incidence of enteric fever. Ten cases occurred on the *Formidable* of the Home Fleet, on which ship there had also been some prevalence during 1912. Exhaustive investigation as to the origin of infection, and particularly as to the possibility of the presence of a carrier case on board, has not so far yielded any positive result. Only 4 cases of Mediterranean fever were admitted throughout the whole navy. One of these occurred at Malta, possibly due to eating goats' milk cheese. Another was a Maltese, an habitual drinker of unboiled goats' milk. The other two cases occurred in the Home Fleet, but are not alluded to in the remarks. Presumably they were not fresh cases, but readmissions. There were 62 cases of dysentery, of which 31 were returned from the China Station, occurring chiefly among men at Shanghai, Hong-Kong, and elsewhere during the revolutionary outbreak. No cases were fatal. Of the 31 China cases 10 were reported as amœbic and 6 as bacillary.

Pneumonia continues to be the most fatal disease in the navy. There were 38 deaths, giving a ratio of 0·29 per 1000, which is, however, lower than the quinquennial average of 0·33. The total number of cases was 595, of which 341 (with 24 deaths) were from the Home Station and 196 (with 11 deaths) from the Home Fleet: 78 were admitted from the *Impregnable*, 45 each from the *Ganges* and *Vivid*, and 43 from the *Pembroke*. No remarks are made as to possible causation or nature of the incidence; some information would have been acceptable on these points. There were 445 cases of malarial fever (3·5 per 1000), less than the quinquennial average (4·7), but more than in 1912 (2·55). 128 cases were admitted on the East Indies Station; 48 of these were from the Bombay Sailors' Home, which is situated in a malarial district, and in the grounds of which rain-water had been allowed to collect, forming a focus of infection. Tuberculosis continues to show a decline in prevalence; the admissions numbered 245, representing a ratio of 1·93 per 1000, compared with the quinquennial ratio of 2·59; and the daily sick 56, or 0·44, compared with 0·57 per 1000. In 191 out of the 245 cases the disease affected the lungs. The East Indies Station had the highest case ratio, 3·2 per 1000. The sick berth staff, with a ratio of 8·1, suffered much more than the other ratings, that for ordinary seamen being only 1·84 per 1000. Venereal diseases show an improvement in every particular; the admissions were 93·17 per 1000, compared with 116·02 in the preceding quinquennium. The constantly sick ratio was 5·19 as against 7·41, and the invaliding 0·81 compared with 1·20 per 1000. These affections caused most inefficiency on the China Station with an admission ratio of 151·11, while in the Home Fleet this was only 92·80 per 1000. Owing chiefly to improved methods of treatment there was much shorter average stay in hospital—i.e., less loss of service—than in previous years. Although the average strength of the navy has increased considerably, the total number of days lost to the service through sickness of this nature was less than in 1912 by 27,800 days, and less than in 1911 by 67,507 days.

There were 15 cases of beri-beri, 8 being reported on the *Perseus* in the Persian Gulf. Rats were found, and a mongoose, which was procured to kill the rats, after a month became paralysed, the various limbs, and finally the diaphragm being affected in turn. This suggests rat transmission; there was no undue rat mortality on board. Four cases of infection by Schistosomum japonicum were recorded from the China Station; 2 were officers who contracted the disease snipe-shooting in paddy fields, and 2 were engine-room artificers infected by wading in river water, with feet and legs bare, while applying a new propeller to the *Woodcock*. In these latter cases the incubation period was determined to be about 40 days. None of the men had waded in water over the knee-joint, so that infection did not occur per anum. There were 76 deaths from drowning, 10 of which occurred when a cutter belonging to the *Perseus* disappeared during bad weather in the Persian Gulf. There were 5 cases of wounds in action (one fatal), sustained during a punitive expedition on the Tungistan Coast.

The prompt appearance of this report, embodying the statistics of the preceding year derived from the most distant parts of the world, is very creditable to the departments concerned. As to the state of health of the Royal Navy, it can be described as most satisfactory.

A MONTHLY RECORD OF ATMOSPHERIC POLLUTION.

COMMITTEE FOR THE INVESTIGATION OF ATMOSPHERIC POLLUTION:

Summary of Reports for Month ending Jan. 31st, 1915.

1	2	3	4	5	6	7	8	9	10	11	12
Place.	Correspondent.	Rainfall in millimetres.	Metric tons of deposit per square kilometre during month.								
			Insoluble matter.			Soluble matter.			Included in soluble matter		
			Tar.	Carbonaceous other than tar.	Ash.	Loss on ignition.	Ash.	Total solids.	Sulphate as (SO$_4$).	Chlorine (Cl).	Ammonia (NH$_3$).
ENGLAND—											
Birmingham, Central ...	Dr. J. Robertson, M.O.H.	72	0·15	5·29	13·16	2·70	7·00	28·30	4·40	0·60	0·04
,, Aston	,,	67	0·08	1·11	3·43	1·10	4·00	9 70	2 00	0·40	0·04
,, S.W.	,,	80	0·05	0·75	2·20	0·70	2·60	6·30	1·20	0·40	0·02
Bolton	Dr. J. E. Gould, M.O.H.	158	0·03	1·12	3·30	5·67	9·44	19·56	4·88	2·24	0·13
Exeter	Mr. F. Southerden.	83	0·04	1·03	2·34	1·56	3 59	8·56	1·50	1·00	0·02
Kingston-upon-Hull	Mr. A. R. Tankard, Public Analyst.	64	0·08	2·34	4·18	2·69	4·22	13·51	2 90	0·48	0·08
Liverpool	Dr. E. W. Hope, M.O.H.	93	0·22	2·03	7·25	2·22	4·44	16·17	3·47	0·59	2·58
London—											
Meteorological Office ...	Director, THE LANCET Laboratory.	82	0·21	1·09	6·07	6·67	5 86	19·90	3·22	1·17	0·07
Embankment Gardens...	Mr. J. Ollis, Chief Officer, Public Control Department, L.C.C.	90	0·14	3·18	6·42	0·71	8·08	18·55	4·47	0·95	0·07
Finsbury Park...	,,	107	0·14	1·68	3·18	2·56	4·69	12·25	3·12	0·68	0·15
Ravenscourt Park	,,	80	0·06	0·96	2·18	0·67	6·08	9·95	2·10	0·74	0·03
Southwark Park	,,	96	0·10	3·63	6·08	2·11	6·14	18·06	3 41	0·71	0·13
Wandsworth Common ...	,,	78	0·03	0·65	2·16	1·40	2·97	7·21	2·23	0·44	0·02
Victoria Park	,,	96	0·07	1·78	3·56	3·27	6·74	15·42	5·20	0·71	0·05
Golden Lane	Dr. W. J. Howarth, M.O.H	94	0·07	2·46	3 83	2·36	4·51	13·12	3·64	0·73	0·10
Malvern	Mr. W. Osborne Thorpe, Engineer U.D.C.	64	Trace.	0·05	0·07	0·54	1·39	2·06	0·74	0·24	0·01
Manchester—											
Ancoats Hospital	Mr. J. Warrington, Secretary, Air Pollution Advisory Board.	128	0·08	4·82	12·23	2·25	11·21	30·59	6·5[illegible]	1·53	0·11
Bowdon	,,	106	0·01	0·50	1·56	0·72	3·46	6·25	1·86	0·83	0·07
Cheadle	,,	109	0·06	2·29	3·62	1·08	3 58	10·63	2·22	0·84	0 06
Davyhulme	,,	104	0·01	0·90	3·90	1·12	6·75	12·68	3·48	1·08	0·08
Fallowfield	,,	116	0·07	1·47	4·61	1·11	5·98	13 24	3·35	0·97	0·07
Moss-side	,,	125	0·19	2·32	6·12	1·70	8·36	18·69	4·59	1·37	0·13
Philips Park	,,	120	0·13	3·18	7·47	2.93	8·88	22·59	5·13	1·69	0·06
Queen's Park	,,	123	0·08	1·84	7·77	1·33	9·16	20·18	5·43	1·38	0·06
School of Technology ...	,,	118	0 12	3·73	9·40	1·89	7·37	22·51	4·45	1·41	0·10
Whitefield	,,	124	0·05	1·40	5·42	1·19	7·47	15·53	4 45	1·06	0·08
Newcastle-on-Tyne	Dr. H. Kerr, M.O.H.	50	0·12	3·65	5·36	2·97	3·77	15 87	2·85	0·32	0·13
Oldham	Dr. J. B. Wilkinson, M.O.H.	119	0·27	5·68	11·69	4·78	11·46	33 80	5·11	0·93	0·14
Sheffield—											
Attercliffe Burial Ground	Prof. W. P. Wynne, The University.	62	0·13	3·78	8·46	1·49	6·17	20·03	2 45	1·79	0·15
Hillsborough Park	,,	71	0·08	1·27	4·54	1·25	4·94	12·08	2·04	0·64	0·04
Meersbrook Park	,,	76	0·08	1·56	4·03	1·52	4·70	11·89	2 20	0·85	0·05
Weston Park	,,	83	0·08	1·38	3·79	1·53	5·65	12·43	2·72	0·93	0·04
York...	Dr. E. M. Smith, M.O.H.	65	0·11	1·49	3·14	2·34	3·63	10·71	1·71	0·64	0·50
SCOTLAND—											
Leith	Mr. Thomas Bishop, Sanitary Inspector.	23	0·03	0·80	2·88	1·20	1·82	6·73	0 97	0·20	0·18
Greenock	Mr. J. Devine, Sanitary Inspector.	87	Bottle burst by frost.			1·32	2·74	—	1·53	0·67	0·11
Paisley	Mr. W. W. Kelso, Sanitary Inspector.	67	0·16	4·92	5·82	2·66	3·20	16·76	1·72	0·49	0·06
Stirling	,,	42	0·23	2·04	2·36	1·84	2·54	9·01	1·73	0·45	0·08

Col. 4 includes all matter insoluble in water but soluble in CS_2. Col. 5 includes all combustible matter insoluble in water and in CS_2. Col. 6 includes all earthy matter, fuel, ash, &c. One metric ton per sq. kilometre is equivalent to: (*a*) Approx. 9lb. per acre; (*b*) 2·56 English tons per sq. mile; (*c*) one gramme per sq. metre; (*d*) 1/1000 millimetre of rainfall (see Col. 3).

The analytical work involved in these returns was undertaken respectively by J. F. Liverseege, F.I.C., Birmingham; Harry Hurst, B.Sc., F.I.C., Bolton; F. Southerden, B.Sc., F.I.C., Exeter; A. R. Tankard, F.I.C., Kingston-upon-Hull; W. H. Roberts, M.Sc., F.I.C., Liverpool; S. A. Vasey, F.I.C., Director, THE LANCET Laboratory (London Meteorological Office collections); J. H. Coste, F.I.C. (Embankment Gardens, Finsbury Park, Ravenscourt Park, Southwark Park, Wandsworth Common, Victoria Park collections), London; F. L. Teed, D.Sc., Golden-lane, London, E.C.; C. C. Duncan, F.I.C., Malvern; E. Knecht, Ph.D., M.Sc., Ancoats Hospital, Bowdon, Cheadle, Davyhulme, Fallowfield, Moss-side, Philips Park, Queen's Park, School of Technology, Whitefield (Manchester collections); J. T. Dunn, D.Sc., Newcastle-on-Tyne; Professor W. P. Wynne, Attercliffe Burial Ground, Hillsborough Park, Meersbrook Park, Weston Park (Sheffield collections); S. H. Davies, M.Sc., York; J. W. Biggart, F.I.C., Greenock; A. Scott Dodd, B.Sc., F.I.C., and R. M. Clark, B.Sc., Leith, Stirling, and Paisley respectively; Messrs. R. R. Tatlock and Thomson, Coatbridge. The correspondents referred to in col. 2 are for the most part public health authorities.

DEATH OF EDWARD THOMAS ERNEST HAMILTON, B.SC., M.D., M.S. LOND., F.R.C.S. ENG.—Dr. Hamilton died at his residence in Johannesburg, South Africa, on March 8th. He was born at Rathgar, near Dublin, in 1867, and was the son of a former surgeon in the Royal Navy. Entering Guy's in 1886, he became a distinguished student there, carrying off a large number of honours. He took the Conjoint qualification of the London Colleges in 1891. At London University he took the B.Sc. in 1889, the M.B., B.S. (first class honours in medicine and surgery) in 1892, the M.D. in 1893, and the M.S. in 1895. He became F.R.C.S. in 1893. He was for four or five years a demonstrator of anatomy at Guy's. In 1898 Dr. Hamilton went out to South Africa and started practice on the Rand. During the Boer War he served as medical officer on one of the hospital ships and in various hospitals ashore. After serving with the rank of major in the field during the recent rebellion Dr. Hamilton became principal medical officer at Swakopmund, the chief port of German South-West Africa, now in British occupation, where he developed an intestinal complaint, and, being much run down from pressure of work, he was ordered to Johannesburg to recuperate. There he became subject to attacks of mental depression, and it is supposed that in one of these fits he terminated his life, as he was found with a fatal bullet wound in his head. Much sympathy is felt for his widow. His funeral took place with military honours.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

A QUARTERLY meeting of the Council was held on April 8th, Sir W. WATSON CHEYNE, the President, being in the chair.

It was resolved :—

> That the best thanks of the Council be and are hereby given to Mr. Arthur H. Cheatle for presenting to the College his large collection of specimens illustrating the surgical anatomy of the temporal bone which the Council regard as a most valuable and useful addition to the Museum. The Council also desire to express to Mr. Cheatle their high appreciation of his services in arranging and cataloguing the whole series of otological specimens, and to record their grateful sense of the care and attention which Mr. Cheatle had so freely devoted to this task.

It was also resolved :—

> That the best thanks of the Council be and are hereby given to Mr. Alban Doran for his valuable services in arranging and cataloguing the obstetrical and gynæcological instruments in the Museum.

In accordance with the recommendation of the Jacksonian Committee the Jacksonian prize for the year 1914 was awarded to the writer of the essay bearing the motto: "With the Help of a Surgeon He Might yet Recover." When the envelope bearing this motto was opened it contained the name of Mr. Jonathan Hutchinson. The subject of the essay was the Pathology, Diagnosis, and Treatment of Trigeminal Neuralgia.

It was resolved that the subject for the Jacksonian prize for the year 1916 should be the Methods and Results of Transplantation of Bone in the Repair of Defects caused by Injury or Disease.

The John Tomes prize was awarded to Mr. James Frank Collier for his scientific work on Comparative Dental Anatomy and Pathology.

In accordance with a report of the examiners in anatomy under the Conjoint Board, it was resolved to appoint Mr. Joseph Clinton Collins, of the London Hospital Medical School, the Begley student for the ensuing three years.

The Council elected to the Fellowship the following two Members of 20 years' standing: Mr. Frederick George Larkin, of Grove Park, and Professor Johnson Symington, of Belfast.

Sir Alfred Pearce Gould was re-elected the representative of the College on the Senate of the University of London.

Dr. G. Bellingham Smith was appointed the representative of the College on the managing committee of the British Hospital for Mothers and Babies at Woolwich.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Philip Norman Button has been appointed Surgeon for temporary service in His Majesty's Fleet.

The undermentioned have been granted a temporary commission as Surgeons in His Majesty's Fleet:—Robert Henry Herdman Newton, William Ernest Boyd, and William Francis Bowen.

The following appointments have been notified :—Temporary Surgeons: H. A. Hewatt, J. B. Crawford, and R. H. H. Newton to the *Victory*, additional, for Haslar Hospital; S. L. Harke to the *Chatham;* and J. G. Watkins to the *Impregnable*.

ROYAL NAVAL VOLUNTEER RESERVE.

The following appointments have been notified :—Surgeon Probationers: R. Sandilands to the *Avon;* F. McG. Ferguson to the *Albatross;* A. O. Ross to the *Stour;* A. R. Oram to the *Test;* N. Jennings to the *Waveney;* E. P. Hicks to the *Druid;* and T. R. F. Kerby to the *Minstrel*.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Captains to be Majors:—Dated Feb. 28th: Arthur C. H. Gray, Douglas P. Watson, Thomas S. Dudding, John E. Powell, Osburne Ievers, Robert H. MacNicol, Hugh H. J. Fawcett, Santiago L. Pallant, Charles R. Sylvester-Bradley, Stanley E. Lewis, Gerard A. Kempthorne, James T. McEntire, Norman E. Dunkerton, Patrick J. Hanafin, John D. Richmond, Marmaduke C. Wetherell, Harold C. Hildreth, William MacD. MacDowall, Reginald T. Collins, Thomas J. Wright, and Arthur C. Osburn.

Herbert Clifford Barclay to be temporary Major (dated March 8th).

Temporary Lieutenant Malcolm C. R. Grahame to be temporary Captain (dated April 10th).

The undermentioned are granted temporary rank whilst serving with the Liverpool Merchants Mobile Hospital:—Dated March 25th: Lieutenant-Colonel: Nathan Raw, late Lieutenant-Colonel, Royal Army Medical Corps, Territorial Force. Major: Thomas Caldwell Litler Jones and Major Arthur Augustus Mussen, Royal Army Medical Corps, Territorial Force. Captain: John Hayward and Stanley Raw. Lieutenant: Harold Bowring, John Miller Woodburn Morison, and Henry Wallace Jones.

Temporary Lieutenant-Colonel (Major, Royal Army Medical Corps, Territorial Force) William A. Turner relinquishes his temporary commission (dated March 29th).

Temporary Captain F. Armstrong having ceased to serve with the Welsh Hospital, relinquishes his commission (dated March 31st).

David Llewelyn Williams to be temporary Captain whilst serving with the Sanitary Section of the Welsh Division (dated Jan. 13th).

Captain Robert J. B. Buchanan, from the Half-pay List, is restored to the establishment (dated March 30th).

Emrys Roberts to be temporary Captain whilst serving with the Field Ambulances of the Welsh Division (dated Jan. 29th).

Arthur Meurig Pryce to be temporary Lieutenant whilst serving with the Field Ambulances of the Welsh Division (dated March 4th).

The undermentioned to be temporary Lieutenants:—Dated Nov. 21st, 1914: Stephen Grange Askey, Percival Courtenay Cole, and Ambrose Wilfred Owen. Dated March 8th: James Leonard Octavius Tilley. Dated March 9th: George Stanley Phillips and Martin Ainger Kirton. Dated March 10th: William Mary O'Connor and William Wagner Turner. Dated March 12th: Horace Burcham Binks, Alexander Hugh Davidson, Samuel Kenny McKee, Robert Noel Thomson, and Arthur Canston Freeth. Dated March 14th: John Vassie Buchanan. Dated March 15th: Michael Louis Neylon, Edward Holmes Rainey, Norman Walmesley Steinberg, Henry Harrison Rudolf Bayley, Lionel Walter Kennedy Scargill, Edward Colston Williams, James Hutchison, John Alexander Douglas Radcliffe, George Riddoch, Victor Joseph McAllister, William Wilson Thomson, Lawrence Drew Shaw, and Arthur Thomas Paterson. Dated March 16th: Russell Vyvyan Steele, Sidney Ernest Elphick, Edward John Eedle, Richard Brinsley Hunt, Charles Stuart, Evan Greene, George Robert Lawless, Montague Albert Farr, Norman Douglas Mackay, Ernest Hamilton Kenny, and Hamilton Mathewson. Dated March 17th: John Walker Wood, John Stewart Caldwell, William Morrison, Rowland Hill Scovell, Owen Henry Bowen, Joseph Currie Lorraine, William Wilkie Scott, and Alfred James Anderson Peters. Dated March 19th: Thomas Graham Brown and Robert Slaney.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Percy Barnard Corbett to be Lieutenant.

The undermentioned Lieutenants are confirmed in their rank:—William B. Jepson and Noel H. W. Saw. Peter MacCallum, Cadet of the Officers Training Corps, to be Lieutenant (on probation).

TERRITORIAL FORCE.

Army Medical Services.

Major G. St. C. Thom, R.A.M.C., vacates the appointment as Deputy Assistant Director of Medical Services, Lowland Division (dated Feb. 21st).

Major Alexander M. McIntosh, from 3rd Lowland Field Ambulance, to be Deputy Assistant Director of Medical Services, Lowland Division (dated Feb. 21st).

Royal Army Medical Corps.

3rd East Anglian Field Ambulance:—Captain Samuel Hughes, from 5th Southern General Hospital, to be Captain (temporary).

2nd Northumbrian Field Ambulance: Herbert Bruce Low (late Captain, 7th Battalion, Durham Light Infantry), to be Captain (temporary).

1st South Western Mounted Brigade Field Ambulance: William Arnold Milner to be Lieutenant.

1st West Lancashire Field Ambulance: Leonard Boole Stott to be Lieutenant.

1st South Midland Field Ambulance: William James Hirst to be Lieutenant.

2nd Welsh Field Ambulance: John Phillip Henry Davies to be Lieutenant.

1st Eastern General Hospital: James Christian Simpson to be Captain, whose services will be available on mobilisation. Robertson Campbell Canney (late Cadet Corporal, London University Contingent, Senior Division, Officers Training Corps) to be Captain, whose services will be available on mobilisation.

1st Southern General Hospital: Arthur Christopher Tibbits to be Lieutenant.

2nd Southern General Hospital: Captain Francis H. Edgeworth to be Major.

1st London (City of London) Sanitary Company: Lionel Watson Hignett to be Lieutenant.

2nd London Sanitary Company: Captain Reginald O. Sibley, from the 4th London General Hospital, to be Captain.

1st London Casualty Clearing Station: Cecil Arthur Robinson to be Lieutenant.

South Midland Casualty Clearing Station: Lieutenant-Colonel William H. Stephen, from 1st South Midland Mounted Brigade Field Ambulance, to be Lieutenant-Colonel.

3rd London General Hospital: Major Arthur W. Mayo Robson, C.V.O., is seconded.

3rd Southern General Hospital: The undermentioned officers are seconded under Paragraph 112, Territorial Force Regulations: Lieutenant-Colonels William T. Freeman and William J. Maurice; Majors George S. Abram, Lansdown M. Guilding, John A. P. Price, and Robert Ritson; Captains Norton B. Clowes, George H. R. Holden, George F. Murrell, Walter B. Secretan, and Fielding Clarke.

2nd London (City of London) General Hospital: Captain Edwin H. Fenwick to be Lieutenant-Colonel (temporary), and is seconded.

Attached to Units other than Medical Units.—Thomas Frankish (late Lieutenant-Colonel, 1st East Lancashire Brigade, Royal Field Artillery), to be Major. To be Lieutenants: James Mathews Heron and Henry William Lance. Lieutenant-Colonel and Honorary Surgeon-Colonel Charles Downing resigns his commission on account of ill-health, and is granted permission to retain his rank and wear the prescribed uniform. Major Robert W. Forrest is placed on Half-pay List on account of ill-health.

DEATHS IN THE SERVICES.

Lieutenant-Colonel William Sandilands Harrison, R.A.M.C., on April 12th, at Haslingden, Lancashire. He became a lieutenant in the Royal Army Medical Corps in 1895, was made a captain in 1898, major in 1906, and was promoted to the rank of lieutenant-colonel last year. He served with the Tirah Expeditionary Force during the operations on the North-West Frontier of India in 1897–8 (medal with clasp). After pursuing research work in Jamaica on tropical diseases he was invalided home, and his death at the early age of 43 years is directly attributable to his investigations.

Deputy Inspector-General Henry L. Crocker, R.N., has been awarded a Greenwich Hospital pension of £50 a year.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 96 English and Welsh towns with populations exceeding 50,000 persons at the last census, 8048 births and 6885 deaths were registered during the week ended Saturday, April 3rd. The annual rate of mortality in these towns, which in the three preceding weeks had been 19·7, 19·3, and 19·8 per 1000 of their aggregate population, estimated at 18,134,239 persons at the middle of this year, was again 19·8 per 1000 in the week under notice. During the 13 weeks of the quarter just ended the mean annual death-rate in these towns averaged 19·6, against 20·6 per 1000 in London. Among the several towns the death-rate in the week under review ranged from 8·2 in Gloucester, 8·9 in Bath, 9·6 in Wimbledon, 10·5 in Darlington, and 10·6 in York, to 27·2 in Middlesbrough, 28·0 in Gateshead, 31·1 in Dudley, 32·4 in West Hartlepool, and 36·1 in Northampton.

The 6885 deaths from all causes were 6 in excess of the number in the previous week, and included 826 which were referred to the principal epidemic diseases, against 739 and 695 in the two preceding weeks. Of these 826 deaths, 495 resulted from measles, 157 from whooping-cough, 77 from infantile diarrhœal diseases, 69 from diphtheria, 16 from scarlet fever, and 12 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·4, or 0·4 per 1000 higher than in the previous week. The deaths attributed to measles, which had been 373, 421, and 397 in the three preceding weeks, rose to 495 in the week under notice, and caused the highest annual death-rates of 3·5 in Coventry, 3·8 in Sheffield, 3·9 in Carlisle, 4·1 in Acton, 4·3 in Merthyr Tydfil, 5·2 in St. Helens, 6·5 in Wolverhampton, 8·6 in Northampton, and 11·3 in West Hartlepool. The deaths referred to whooping-cough, which had been 120, 151, and 127 in the three preceding weeks, rose to 157; the highest death-rates from this cause were 1·3 in Southampton, 1·6 in Middlesbrough, 1·9 in Barnsley, 2·0 in Carlisle, 2·1 in Bootle, 2·5 in Merthyr Tydfil, and 4·0 in Wigan. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 77, 63, and 70 in the three preceding weeks, rose to 77, of which 18 were recorded in London, 8 in Birmingham, 6 in Middlesbrough, and 4 each in Liverpool and Leeds. The deaths attributed to diphtheria, which had been 51, 61, and 58 in the three preceding weeks, rose to 69, and included 16 in London, 4 each in Birmingham, Liverpool, Manchester, and Sheffield, and 3 each in Warrington, Rotherham, and Cardiff. The deaths referred to scarlet fever, which had been 21, 29, and 31 in the three preceding weeks, declined to 16, of which 5 occurred in London, 3 in Salford, and 2 in Oldham. The fatal cases of enteric fever, which had been 15, 14, and 12 in the three preceding weeks, were again 12 in the week under notice, but showed no excess in any particular town.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily declined from 5036 to 2672 in the 18 preceding weeks, had further fallen to 2543 on Saturday, April 3rd; 253 new cases were admitted during the week, against 275, 289, and 301 in the three preceding weeks. These hospitals also contained 1369 cases of diphtheria, 371 of measles, 46 of enteric fever, 14 of whooping-cough, and 3 of small-pox. The 1849 deaths from all causes in London were 86 fewer than in the previous week, and corresponded to an annual death-rate of 21·3 per 1000. The deaths referred to diseases of the respiratory system, which had been 442, 478, and 481 in the three preceding weeks, fell to 475 in the week under notice, but were 195 above the number registered in the corresponding week of last year. The deaths from influenza numbered 45, against 54, 67, and 65 in the three preceding weeks.

Of the 6885 deaths from all causes in the 96 towns 195 resulted from different forms of violence and 414 were the subject of coroners' inquests, while 1804 occurred in public institutions. The causes of 64, or 0·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Manchester, Leeds, Bradford, Newcastle-on-Tyne, and in 54 other smaller towns. Of the 64 uncertified causes, 14 were registered in Birmingham, 9 in Liverpool, 8 in Gateshead, 5 in Stoke-on-Trent, 4 in Warrington, 3 in Sheffield, and 2 each in Bootle, Darlington, South Shields, and Tynemouth.

In the 96 English and Welsh towns 8710 births and 6922 deaths were registered during the week ended Saturday, April 10th. The annual rate of mortality in these towns, which had been 19·3, 19·8, and 19·8 per 1000 in the three preceding weeks, further rose to 19·9 per 1000 in the week under notice. The annual death-rate last week ranged from 8·7 in Lincoln, 8·9 in East Ham, 9·2 in Ilford, 10·3 in Gloucester, and 10·9 in Swindon, to 27·6 in Rochdale, 28·6 in Carlisle, 29·3 in West Bromwich, 30·1 in Dudley, and 36·0 in Wolverhampton.

The 6922 deaths from all causes were 37 in excess of the number in the previous week, and included 767 which were referred to the principal epidemic diseases, against 695 and 826 in the two preceding weeks. Of these 767 deaths, 452 resulted from measles, 167 from whooping-cough, 67 from infantile diarrhœal diseases, 49 from diphtheria, 25 from scarlet fever, and 7 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·2, or 0·2 per 1000 less than in the previous week. The deaths attributed to measles, which had been 421, 397, and 495 in the three preceding weeks, fell to 452 last week, and caused the highest annual death-rates of 4·0 in Croydon, 4·1 in Smethwick, 4·4 in Sheffield and in Stockton-on-Tees, 5·5 in Walsall, 5·7 in West Hartlepool, 5·9 in Carlisle, 6·0 in West Bromwich, 6·9 in Northampton, and 8·7 in Wolverhampton. The deaths referred to whooping-cough, which had been 151, 127, and 157 in the three preceding weeks, further rose to 167 last week, and included 50 in London, 11 in Wigan, 10 in Liverpool, 6 in Birmingham, 5 each in Sheffield and Merthyr, and 4 each in Bristol, Nottingham, Bradford, and Newcastle-on-Tyne. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 63, 70, and 77 in the three preceding weeks, declined to 67 last week, of which 13 occurred in London and 5 each in Birmingham, Liverpool, and Sheffield, and 4 in Manchester. The deaths attributed to diphtheria, which had been 61, 58, and 69 in the three preceding weeks, fell to 49 last week, and included 11 in London, 4 in Liverpool, and 3 in Northampton. The deaths referred to scarlet fever, which had been 29, 31, and 16 in the three preceding weeks, rose to 25 last week, of which 4 were registered in London, 3 in Sheffield, and 2 each in Nottingham and Cardiff. The fatal cases of enteric fever, which had been 14, 12, and 12 in the three preceding weeks, further fell to 7 last week, but showed no excess in any particular town.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily declined from 5036 to 2543 in the 19 preceding weeks, had further fallen to 2505 on Saturday last; 275 new cases were admitted during the week, against 289, 301, and 253 in the three preceding weeks. These hospitals also contained on Saturday last 1346 cases of diphtheria, 347 of measles, 57 of enteric fever, 15 of whooping-cough, and 3 of small-pox. The 1826 deaths from all causes in London were 22 fewer than in the previous week, and corresponded to an annual rate of 21·1 per 1000. The deaths referred to diseases of the respiratory system, which had been 478, 481, and 475 in the three preceding weeks, further fell to 466 in the week under notice, but were 247 in excess of the number registered in the corresponding week of last year. The deaths from influenza numbered 46, against 67, 65, and 45 in the three preceding weeks.

Of the 6922 deaths from all causes in the 96 towns, 251 resulted from different forms of violence, and 543 were the subject of coroners' inquests, while 1941 occurred in public institutions. The causes of 66, or 1·0 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Sheffield, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, and in 63 other smaller towns. Of the 66 uncertified causes, 11 were registered in Birmingham, 10 in Liverpool, 5 in Stoke-on-Trent, 4 in Dudley, and 3 each in Coventry and Gateshead.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,345,500 persons at the middle of this year, 1144 births and 995 deaths were registered during the week ended Saturday, April 3rd. The annual rate of mortality in these towns, which had been 20·9, 20·8, and 21·1 per 1000 in the three preceding weeks, further rose to 22·1 per 1000 in the week under notice. During the 13 weeks of the quarter just ended the mean annual death-rate in these towns averaged 22·4, against a corresponding rate of 19·6 per 1000 in the large English towns. Among the several towns the death-rate in the week under notice ranged from 11·3 in Motherwell, 15·3 in Kirkcaldy, and 16·2 in Leith, to 23·3 in Edinburgh, 27·1 in Dundee, and 31·1 in Hamilton.

The 995 deaths from all causes exceeded those in the previous week by 47, and included 181 which were referred to the principal epidemic diseases, against 139 and 132 in the two preceding weeks. Of these 181 deaths, 104 resulted from whooping-cough, 45 from measles, 11 from scarlet fever, 10 from infantile diarrhœal diseases, 6 from diphtheria, and 5 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 4·0, against a corresponding rate of 2·4 per 1000 in the large English towns. The deaths attributed to whooping-cough, which had been 87, 88, and 81 in the three preceding weeks, rose to 104 in the week under notice, and included 60 in Glasgow, 19 in Dundee, 5 in Edinburgh, 4 in Hamilton, and 3 each in Leith, Clydebank, and Ayr. The deaths referred to measles, which had been 15, 26, and 21 in the three preceding weeks, rose to 45, and comprised 31 in Glasgow, 8 in Dundee, 3 in Aberdeen, 2 in Edinburgh, and 1 in Perth. The fatal cases of scarlet fever, which had been 13, 11, and 12 in the three preceding weeks, fell to 11, and included 5 in Glasgow and 2 each in Aberdeen and Paisley. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 5, 6, and 10 in the three preceding weeks, were again 10 in the week under review, of which 5 occurred in Glasgow and 2 in Aberdeen. The deaths referred to diphtheria, which had declined from 15 to 7 in the four preceding weeks, further fell to 6, and comprised 3 in Edinburgh, 2 in Glasgow, and 1 in Paisley. The 5 fatal cases of enteric fever occurred in Glasgow.

The deaths referred to diseases of the respiratory system, which had declined from 264 to 186 in the four preceding weeks, further fell to 162 in the week under notice, and were 4 below the number in the corresponding week of last year. The deaths attributed to violence numbered 21, against 36 and 34 in the two preceding weeks.

In the 16 largest Scotch towns 1291 births and 934 deaths were registered during the week ended Saturday, April 10th. The annual rate of mortality in these towns, which had been 20·8, 21·1, and 22·1 per 1000 in the three preceding weeks, fell to 20·8 per 1000 in the week under notice. Among the several towns the death-rate ranged from 7·6 in Falkirk, 11·8 in Coatbridge, and 12·9 in Clydebank, to 22·6 in Glasgow, 23·8 in Dundee, and 34·7 in Greenock.

The 934 deaths from all causes were 61 fewer than in the previous week, and included 154 which were referred to the principal epidemic diseases, against 132 and 181 in the two preceding weeks. Of these 154 deaths, 75 resulted from whooping-cough, 41 from measles, 18 from infantile diarrhœal diseases, 11 from diphtheria, 6 from scarlet fever, and 3 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 3·4, against 2·2 per 1000 in the large English towns. The deaths attributed to whooping-cough, which had been 88, 81, and 104 in the three preceding weeks, fell to 75 last week, of which 37 were recorded in Glasgow, 11 in Dundee, 9 in Edinburgh, 6 in Greenock, and 5 in Leith. The deaths referred to measles, which had been 26, 21, and 45 in the three preceding weeks, fell to 41 last week, and comprised 30 in Glasgow, 8 in Dundee, and 3 in Aberdeen. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 6, 10, and 10 in the three preceding weeks, further rose to 18 last week, and included 7 in Glasgow and 3 each in Dundee and Kilmarnock. The deaths attributed to diphtheria, which had declined from 15 to 6 in the five preceding weeks, rose to 11 last week, of which 5 occurred in Glasgow and 3 in Edinburgh. The deaths referred to scarlet fever, which had been 11, 12, and 11 in the three preceding weeks, declined to 6 last week, and included 4 in Glasgow. Of the 3 fatal cases of enteric fever, 2 occurred in Glasgow and 1 in Kirkcaldy.

The deaths referred to diseases of the respiratory system, which had declined from 264 to 162 in the five preceding weeks, rose to 182 in the week under notice, and were 45 above the number registered in the corresponding week of last year. The deaths attributed to violence numbered 32, against numbers declining from 36 to 21 in the three preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,212,380 persons at the middle of this year, 597 births and 533 deaths were registered during the week ended Saturday, April 3rd. The annual rate of mortality in these towns, which had declined from 27·6 to 23·9 per 1000 in the five preceding weeks, further fell to 22·9 per 1000 in the week under notice. During the 13 weeks of the quarter just ended the mean annual death-rate in these towns averaged 25·4, against corresponding rates of 19·6 and 22·4 per 1000 in the English and Scotch towns respectively. The death-rate during the week under review was equal to 22·9 in Dublin (against 21·3 in London and 23·1 in Glasgow), 23·3 in Belfast, 28·6 in Cork, 10·1 in Londonderry, 13·5 in Limerick, and 26·6 in Waterford, while in the 21 smaller towns the mean death-rate was 23·8 per 1000.

The 533 deaths from all causes were 22 fewer than the number in the previous week, and included 37 which were referred to the principal epidemic diseases, against 36 and 47 in the two preceding weeks. Of these 37 deaths, 13 resulted from whooping-cough, 11 from infantile diarrhœal diseases, 7 from measles, and 3 each from scarlet fever and enteric fever, but not one from diphtheria or from small-pox. The annual death-rate from these diseases was equal to 1·6, against corresponding rates of 2·4 and 4·0 per 1000 in the English and Scotch towns respectively. The deaths attributed to whooping-cough, which had increased from 10 to 16 in the four preceding weeks, fell to 13 in the week under notice, and comprised 10 in Dublin and 3 in Belfast. The deaths of infants (under 2 years) referred to diarrhœa and enteritis, which had been 14, 4, and 11 in the three preceding weeks, were again 11, and included 4 each in Dublin and Belfast. The fatal cases of measles, which had been 8, 8, and 12 in the three preceding weeks, fell to 7, and comprised 4 in Belfast and 3 in Portadown. The 3 deaths attributed to scarlet fever, of which 2 occurred in Dublin and 1 in Clonmel, were slightly below the average in the earlier weeks of the quarter. Of the 3 deaths referred to enteric fever 2 were recorded in Cork and 1 in Dublin. In addition to the above deaths a fatal case of typhus was registered in Dublin.

The deaths referred to diseases of the respiratory system, which had declined from 188 to 145 in the four preceding weeks, further fell to 121 in the week under notice. Of the 533 deaths from all causes, 161, or 30 per cent., occurred in public institutions, and 5 resulted from various forms of violence. The causes of 28, or 5·3 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the English towns the proportion of uncertified causes did not exceed 0·9 per cent.

In the 27 town districts of Ireland 633 births and 553 deaths were registered during the week ended Saturday, April 10th. The annual rate of mortality in these towns, which had steadily declined from 27·6 to 22·9 per 1000 in the six preceding weeks, rose to 23·8 per 1000 in the week under notice. The death-rate was equal to 26·1 in Dublin (against 21·1 in London and 22·6 in Glasgow), 21·1 in Belfast, 19·7 in Cork, 15·2 in Londonderry, 36·6 in Limerick, and 41·8 in Waterford, while in the 21 smaller towns the mean rate was 22·9 per 1000.

The 553 deaths from all causes were 20 in excess of the number in the previous week, and included 40 which were referred to the principal epidemic diseases, against 47 and 37 in the two preceding weeks. Of these 40 deaths, 16 resulted from measles, 15 from whooping-cough, and 3 each from enteric fever, scarlet fever, and infantile diarrhœal diseases, but not one from diphtheria or from small-pox. The mean annual rate from these diseases was equal to 1·7, against corresponding rates of 2·2 and

3·4 per 1000 in the English and Scotch towns respectively. The deaths referred to measles, which had been 8, 12, and 7 in the three preceding weeks, rose to 16 last week, and included 6 each in Belfast and Coleraine and 4 in Portadown. The deaths attributed to whooping-cough, which had been 14, 16, and 13 in the three preceding weeks, rose to 15 last week, and comprised 9 in Dublin, 5 in Belfast, and 1 in Cork. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 4, 11, and 11 in the three preceding weeks, declined to 3 last week. Of the 3 deaths from scarlet fever, 2 occurred in Waterford and 1 in Newtownards. The 3 fatal cases of enteric fever were registered in Dublin.

The deaths referred to diseases of the respiratory system, which had declined from 188 to 121 in the five preceding weeks, rose to 158 in the week under notice. Of the 553 deaths from all causes, 151, or 37 per cent., occurred in public institutions, and 7 resulted from various forms of violence. The causes of 17, or 3·1 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the English towns the proportion of uncertified causes did not exceed 1·0 per cent.

BOOKS, ETC., RECEIVED.

LAURIE, T. WERNER, London.
  Round the World in Strange Company. By Nicholas Everitt, F.Z.S. Price 12*s*. 6*d*. net.

LIVINGSTONE, E. AND S., Edinburgh.
  Text-book of Public Health (late Husband's). By E. W. Hope, M.D., D.Sc. Eighth edition. Revised and enlarged. Price 5*s*. net.

LONGMANS, GREEN, AND CO., London.
  Molecular Association. By W. E. S. Turner, D.Sc. Lond., M.Sc. Birm. Price 5*s*. net.

MORGAN AND SCOTT, LIMITED.
  The Gospel of Healing. By A. B. Simpson, D.D. Price 2*s*. net.

SAUNDERS, W. B., COMPANY, London.
  Differential Diagnosis. Vol. I. Presented through an Analysis of 385 Cases. By Richard C. Cabot, M.D., Assistant Professor of Clinical Medicine, Harvard University Medical School. Third Edition. Revised. Vol. II. Presented through an Analysis of 317 Cases. Price, each, 24*s*. net.
  A Laboratory Manual and Text-book of Embryology. By Chas. W. Prentiss, A.M., Ph.D., Professor of Microscopic Anatomy in the Northwestern University Medical School, Chicago. Price 17*s*. net.
  Nervous and Mental Diseases. By Archibald Church, M.D., Professor of Nervous and Mental Diseases, Northwestern University; and Frederick Peterson, M.D. Price 21*s*. net.
  A Text-book of Diseases of the Nose and Throat. By D. Braden Kyle, M.D., Professor of Laryngology, Jefferson Medical College, Philadelphia. Fifth edition. Price 20*s*. net.
  The Principles of Hygiene. By D. H. Bergey, A.M., M.D., Assistant Professor of Bacteriology at the University of Pennsylvania. Fifth edition. Price 13*s*. net.

THE SCIENTIFIC PRESS, LIMITED, London.
  Burdett's Hospitals and Charities, 1915. By Sir Henry Burdett, K.C.B., K.C.V.O. Price 10*s*. 6*d*. net.

WILSON, EFFINGHAM, London.
  Practical Guide to the Death Duties and the Preparation of Death Duty Accounts. By Charles Beatty, Solicitor. Fifth edition, revised and enlarged. Price 4*s*. net.

A "LINEN LEAGUE."—At a meeting held at the South Devon and East Cornwall Hospital on April 9th, under the presidency of Sir Henry Lopes, it was decided to form a "linen league" in connexion with the institution. The league will supply linen, quilts, bed-clothing, &c., for the use of the patients. It is hoped that this will be the means of saving the hospital £200 per annum, which is the sum of money at present spent on these articles.

ROYAL MEDICAL BENEVOLENT FUND.—The following is a further summary of cases recently relieved by the Fund:—

Daughter, aged 49, of F.R.C.S. Eng. who practised at Bigglesdale. Suffering from epilepsy and has a chronic gastric ulcer. Only income £21 per year from another charity. Relieved 16 times, £141. Voted £12 in 12 instalments.—Widow, aged 77, of M.D. Glasg. who practised at Bournemouth. Lives in own house, but daughter who is a musician and helped to keep the home unable to obtain engagements since the war, and two sons, artists, unable to help. Previous relief 11 times, £62. Voted £5 and recommended for an annuity.—Widow, aged 76, of M.R.C.S. Eng. who practised at Islington. Health bad and failing eyesight. Only income old age pension. One son, a commercial traveller, married, with family, unable to help. Relieved once, £18. Voted £18 in 12 instalments.—Widow, aged 57, of M.D. Edin. who practised at Wetheral. Tries to earn a little by taking boarders, but has not been successful of late. Suffering from chronic rheumatism. Only son abroad and only able to help slightly. Previous help 8 times, £96. Voted £12 in 12 instalments.—Widow, aged 67, of M.R.C.S. Eng. who practised in London. Suffering from malignant growth in left breast and quite unable to do anything. Five children, but only three of the daughters are able to help very slightly. Previous relief 16 times, £183. Voted £12 in two instalments.

Correspondence.

"Audi alteram partem."

CEREBRO-SPINAL MENINGITIS.

To the Editor of THE LANCET.

SIR,—In his interesting paper on meningococci in peripheral blood in THE LANCET of April 10th Dr. A. C. Coles asks if the discovery of the germ in blood films made from peripheral blood is a practical method of diagnosis, or are the meningococci only to be found in the septicæmic type of the disease?

Personally, I believe this to be the method of diagnosis which will shortly be widely adopted. I found the germ in 80 consecutive cases,[1] and found it more readily in this manner than from the throat, &c. In some cases I failed to grow any diplococcus from any source, including the cerebro-spinal fluid, though the patient died with typical symptoms, and blood films had shown diplococci during life, and films made from the cerebro-spinal fluid showed intracellular diplococci after death.

But we have to prove that the germ we find in peripheral blood films is the germ which causes the disease, for this is not yet admitted by all, particularly in slight cases. In blood the meningococci I have seen often have a capsule. I have not seen this fact mentioned. As Dr. Coles points out, there is a strong resemblance to the gonococcus, and recognising the possibility of mutation in this germ as in others, it would appear desirable that further investigations should at once be made. The presence of the gonococcus in the blood in sufficiently large numbers to be found in blood films is, to say the least, not a common event, and the symptoms of the two diseases are sufficiently unlike to make confusion between the two unlikely. The pneumococcus may be put out of court by the fact that it is strongly Gram-positive and the meningococci are not.

The micrococcus catarrhalis is not mentioned by Dr. W. d'Este Emery[2] as being found in the blood, so I think we may take it that it is not a frequent habitant. The diplococci which remain are the meningococci, and it will be interesting to ascertain the exact characters of the organism found, particularly whether the diplococci described by Weichselbaum, Jaeger, and others owe their differences to environmental conditions. But the first theorems needing proof are (1) diplococci are to be found in the peripheral blood in practically all cases, and (2) they are the same diplococci as those found in the meninges.

But I would wish to give one word of warning as the result of my own failures to grow the germ in some cases in which I found it in the blood. It is not easy to grow unless special care is taken, as is shown by the various reports already published, and it *is* commonly easy to detect in the blood. Hence it is important that this question of identity be settled as soon as possible, so that the simpler method of diagnosis may be utilised if it is shown to be adequate. Anyone who has frequently made cultures from blood will agree that a few drops are not enough. Even where the germ can be seen in blood films 2–5 c.c. are needed. Hence, if mere examination of blood films is sufficient, it is important that we know the fact as soon as possible.

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[1] Journal of Tropical Medicine, November, 1900.

[2] Clinical Bacteriology and Hæmatology, d'Este Emery, p. 158.

I am, Sir, yours faithfully,
Colwall, April 12th, 1915. MARY H. WILLIAMS.

To the Editor of THE LANCET.

SIR,—The very interesting report of a case of the above disease sent by Dr. Alfred C. Coles to THE LANCET of April 10th will, I hope, be followed by other reports where early blood examinations have been made. If the meningococci are to be generally found in the blood it will be useful for early diagnosis, especially for practitioners in the country who may not have, or be able to procure, the necessary instrument for lumbar puncture. In the case of the blood being found infected it will give us an opportunity to try the soamin treatment described by Dr. George Low in the *British Medical Journal* of Feb. 27th last, and also used by Mr. E. Norman Butler in British East Africa and described in THE LANCET of April 3rd.

In a case I had recently the symptoms tallied with those of Dr. A. D. Edwards's case as quoted by Dr. Coles—viz., intense pain in the lumbar region and vomiting and *no* head retraction—I notice the early symptoms of the African native cases were intense headache and head retraction. In my case meningococci were found after lumbar puncture, but blood was not examined. After consultation with Dr. Hyla Greves, of Bournemouth, soamin was tried and seemed to benefit the patient for a fortnight, but the case then got rapidly worse and Flexner's serum was used, though too late, as the patient died on the twentieth day after onset. I hope statistics will soon be published showing the mortality rate of the disease, where serum has been used and where not.

I am, Sir, yours faithfully,
Christchurch, Hants, April 11th, 1915. W. MOSS BRISTOW.

ANGINA PECTORIS.

To the Editor of THE LANCET.

SIR,—I am much interested in the letter of Dr. Edgar Lea on a case of angina pectoris, in your issue of April 10th. The case was one of syphilitic aortitis with angina, and needs no particular "segmental" or other "neurosis" to explain it. Dr. Lea's able letter gives precisely the data wanted in such cases. But I wish to thank him especially for his careful observations concerning tender points. Their physiological interest is great, but, like Dr. Lea, I have found them too fugitive and inconstant for clinical use; and this opinion I have diffidently ventured to state already in my book on arterial disease, which now—after long delays due to the war—will, I trust, soon be published.

I am, Sir, yours faithfully,
Cambridge, April 10th, 1915. CLIFFORD ALLBUTT.

HEALTH RESORTS FOR CONVALESCENCE AND SICK LEAVE IN THE ARMY.

To the Editor of THE LANCET.

SIR,—You have described in a leading article in the last issue of THE LANCET with unanswerable force the hiatus that begins after hospital treatment, and ends either in restoration to health or in chronic disability. It is to be feared that this period of convalescence is often unnecessarily painful and prolonged, and that, indeed, it frequently fails of its effects for want of continued medical care and supervision. Many of the excellent convalescent homes abundantly provide for an uncomplicated recovery, but, as you suggest, there are a very large number of cases in which a continuance of special care and treatment is needful.

Experience has shown that spas and other health resorts are the proper places for these cases. The treatment at health resorts of military cases has been amply justified already in this country, although, happily, on a comparatively small scale. We need only refer to such common conditions as painful wounds, post-operative cases, nervous disorders from shock and injury, rheumatism, tachycardia, &c. For the very large numbers now in contemplation special arrangements are of course requisite, but there is no lack of willing service at the health resorts, and all their resources are freely offered for wounded and invalid soldiers.

A committee of the Council of the Section of Balneology and Climatology of the Royal Society of Medicine has been engaged in collating the necessary information and supplying it to the military authorities. They have prepared a short pamphlet which includes: (1) a summary of the medical and surgical maladies most commonly met with in the military hospitals, for which spa treatment at a health resort is indicated; and (2) a list of the British spas, as well as other bathing establishments, with the factors influencing the preference for one or another in the treatment of such maladies.

It is the aim of the committee in association with local committees and representatives throughout the country to fill the hiatus to which you have referred by organising a scientific after-treatment at our many valuable health stations. They also have in hand a proposal for furnishing to the War Office returns of the accommodation available, both for men and officers.

The practical carrying out of such a work on a large scale naturally presents some difficulties. To one of these you refer. Medical men, without, at all events, temporary military rank, are often at a loss when in charge of military cases. There is also the larger difficulty how to provide an efficient and scientific distribution of the large numbers of cases leaving the great hospitals, so that each man may be sent to the locality where he will receive the greatest benefit. These and other problems present, however, no insuperable difficulties. They are mainly questions of machinery. The great and encouraging fact is the willingness of all concerned to do their part.

We are, Sir, yours faithfully,
R. FORTESCUE FOX,
April 11th, 1915. J. CAMPBELL MCCLURE.

"THE MINOR HORRORS OF WAR."

To the Editor of THE LANCET.

SIR,—Although the first edition of my little book on the above subject was a large one, a second edition is already being called for.

As I am anxious to make the book as useful as possible, I should be grateful if any medical man who has had actual experience in dealing with *Pediculus vestimenti* and *Pediculus capitis*, and who knows of remedies other than those mentioned in the first edition, would communicate with me at the address given below.

I am, Sir, yours faithfully,
A. E. SHIPLEY.
Christ's College Lodge, Cambridge, April 12th, 1915.

PROBATIONERS AND WAR HOSPITALS.

To the Editor of THE LANCET.

SIR,—I beg to suggest that all probationers having had three months' ward training in the general hospitals be allowed to serve for three or six months in the military hospitals, such time counting as part of the three or the four years' training, as the case may be. The universities and examining boards allow students holding dresserships in the military hospitals to count the time as part of their clinical instruction. The adoption of the above suggestion with regard to nurses brings the two branches of the profession into line, and while the service would prove of great advantage to the sick and wounded, the experience gained by the probationers must add to their future efficiency.

I am, Sir, yours faithfully,

April 12th, 1915. SURGEON.

THE DEARTH OF DOCTORS.

To the Editor of THE LANCET.

SIR,—Dr. William Bruce's letter in your issue of to-day's date is very difficult to understand. Men with four years' training at the hospitals at present have been brought up on a system that would render them very inefficient practitioners if qualified out of hand. Their curriculum, as in the old days, is not devised for it. They would in some cases be a source of grave danger. Nobody should know this better than a one-time member of the General Medical Council. Again, if we *de novo* revert to the old four years' system from this on we may get a large crop, but, I fear, very many tares. Medical science has advanced too far for even the elements to be learned by the average man in five years. After a good training as house surgeon or the like, he may have a working knowledge but no more. Now why revert to a four years' course when the war cannot last so long? Men are being qualified fairly rapidly; thousands of other men are abroad, and very many thousands fit and well at home. Most of these will be ready for work when the war is over. The plan outlined in your leading article seems not only the best but the sole plan that can meet the situation.

I am, Sir, yours faithfully,

April 10th, 1915. X. Y. Z.

To the Editor of THE LANCET.

SIR,—With regard to the letter by Dr. W. Bruce on this subject in THE LANCET of April 10th, may I point out how in one or two directions the shortage of doctors for the army might be relieved? 1. A certain number of qualified men are serving as combatants; they should be transferred to the Royal Army Medical Corps. 2. The Reserve Corps of Territorials, and those units who have not volunteered for service abroad, absorb a considerable number of men whose time is by no means fully occupied, and whose duties could be easily undertaken by part-time civilians. 3. The services of a number of experienced men, who are not too old at 40 or even 50, could be obtained to do the work at base hospitals either in France or at home, setting free a corresponding number of younger men for service in the field.

In this, as in so many other directions, we are hampered by the absence of compulsory military service by which every man could be made to do the national work for which he was most fitted.

I am, Sir, yours faithfully,

TEMPORARY LIEUTENANT, R.A.M.C. (T.).

April 12th, 1915.

Obituary.

PROFESSOR FRIEDRICH LOEFFLER.

THE death is announced of Professor Friedrich Loeffler, the eminent bacteriologist. He was born at Frankfort-on-the-Oder in 1852, and was educated in the Universities of Würzburg and Berlin. In 1888 he was appointed professor and director of the Hygienic Institute at the University of Greifswald, and in 1895 he was elected a member of the Imperial Institute, when, in conjunction with Koch and Gaffky, he pursued some investigations in regard to disinfection by means of steam.

His researches carried him into various paths of bacteriology, but it was in reference to the causal organism of diphtheria that he was best known. Klebs in 1883 had described a bacillus which he had observed in diphtheritic membranes, but Loeffler was the first who succeeded in cultivating it in artificial media, and in producing in animals by means of inoculations distinct lesions which resembled diphtheria. He had made a careful study of the use of aniline dyes in staining bacteria. The solution known as "Loeffler's methylene blue" is largely employed, and is particularly suitable for the demonstration of the diphtheria bacillus, as it brings out well the metachromatism of the granules in the bacilli. His researches in diphtheria as occurring in animals and birds were also valuable. He succeeded in producing membranous inflammation in guinea-pigs by vigorously inoculating the vaginal mucosa, and in rabbits by treating the conjunctiva or tracheal mucous membrane in a similar manner. He further investigated the disease as occurring in calves and pigeons. Amongst other morbid conditions which he investigated may be mentioned the "red murrain" of pigs, which until then had been classed with swine fever.

Professor Loeffler as a pioneer will be placed amongst the foremost of German scientists. The results of his researches, both directly and indirectly, as leading up to the work of other observers (as, for instance, the introduction of the antitoxin treatment of diphtheria), have proved of the highest value to mankind, whilst the manner in which his investigations were conducted has formed a firm and instructive basis for other bacteriologists.

HENRY LEWIS JONES, M.D. CANTAB., F.R.C.P. LOND.,

CONSULTING MEDICAL OFFICER TO THE ELECTRICAL DEPARTMENT AT ST. BARTHOLOMEW'S HOSPITAL.

WE announced last week the death of Dr. Henry Lewis Jones, consulting medical officer to the electrical department at St. Bartholomew's Hospital, which took place on April 4th, at his residence in Harley-street. He had for a long period been in bad health. The disease to which he ultimately succumbed was at first very obscure in its manifestations, and an operation performed nearly two years ago was for a time successful, so that until September of last year he was able to carry on his extensive practice. But it was recognised that the improvement might be only temporary, and the death of his only son, who went down in H.M.S. *Hawke*, proved a shock from which he never really rallied. From that day he steadily lost ground, and the end was expected.

Henry Lewis Jones, who was born in 1857, the son of a naval chaplain, was educated at Shrewsbury School and Caius College, Cambridge, which college he entered in 1876 as a senior science scholar. He graduated with honours in the Natural Science Tripos and found time also to stroke with success one of his college boats at a time when Caius rowing was particularly good. From Cambridge he went to St. Bartholomew's Hospital, where, having held all the usual appointments, he particularly devoted his attention to the use of electricity in medicine, a branch of therapeutics which 30 years ago was only threatening the position which it has since reached. He was elected physician in charge of the electrical department at St. Bartholomew's Hospital, and throughout his association with that hospital he proved himself the effective pioneer of his subject in this country. He was thoroughly practical as well as really learned, he had the power of explaining himself, and was quick to encourage ability in others. He could teach verbally, and write clearly. His book on "Medical Electricity," which is now in its sixth edition, fully deserves the success which it has attained, while his more recent small work on ionic medication was the first attempt to explain to the medical profession generally the principles of the method, and to give an account of the clinical results to be derived from its employment. The writings of Lewis Jones, in fact, have done more than any others to give medical electricity the position which it now holds in this country, and it was largely due to him that ionic medication made strides in professional favour. In his treatises he avoided theoretical discussions as far as possible, while the clinical records which accompanied the work on ionic medication were nearly all concerned with lesions of a superficial character; and this was characteristic of the author's thoroughness and honesty. He was determined not to exploit a good thing by using it wrongly, and to lead no one else into mistaken enthusiasm; indeed, he protested against the way in which, for example, subjects of polyarticular arthritis have been subjected often by unqualified persons to so-called ionic medication. His position was recognised by Government, who asked him to act as official delegate at the International Congress of Physiotherapy at Liége in 1905, and at a similar Congress in Paris five years later, while in 1913 he was President of the British Electro-Therapeutic Society.

Henry Lewis Jones was scientific to his fingertips and absolutely practical. He was extremely shrewd in his judgments, but quite broad-minded in his attitudes. He was very hard-working, but found time to enjoy life. In him we have lost one of the best type of practising physicians, and many personal friends will regret him.

He married in 1896 the eldest daughter of Count H. H. Platen-Hallermund, by whom he had one son, whose sad death has been mentioned.

WILLIAM ARTHUR BRAILEY, M.A., M.D.CANTAB.,

CONSULTING OPHTHALMIC SURGEON TO GUY'S HOSPITAL.

WE regret to announce the death of Dr. William Arthur Brailey, the well-known ophthalmologist, which occurred on April 8th, in his seventieth year, at 11, Old Burlington-street, W.

Dr. Brailey was born at Uttoxeter in 1845, the only boy in a family of seven. He was educated at Woodhouse Grove School and passed the London matriculation at the age of 16 years with first-class honours. He entered at Guy's Hospital, but his health proving unequal to the work, he migrated to Cambridge, where his father, the Rev. William Brailey, a Wesleyan minister, then resided. His health improving, young Brailey was fortunate enough to obtain an open scholarship at Downing College. In 1866 he took the B.A. London with the exhibition in biology, and in 1867 was in the first class in the Cambridge Natural Science Tripos. A few years later (1871) he graduated in medicine at Cambridge, and in the same year was elected a Fellow of Downing College. He soon returned to Guy's Hospital, but in October, 1873, married and went into general practice. After something less than a year's general practice at Witham, Essex, Brailey returned to London and took up work at the Moorfields Eye Hospital, where he formed a friendship with Sir William Bowman, which ended only with the latter's death. He became registrar and curator at the Moorfields Hospital, and was also appointed lecturer on comparative anatomy at Guy's Hospital. At a somewhat later period, when Mr. Bader relinquished the ophthalmic surgeoncy at Guy's Hospital, he was succeeded by Mr. Charles Higgens, and Dr. Brailey was appointed assistant ophthalmic surgeon. That appointment he held for many years, until, indeed, the statutory age of 60, when he was appointed consulting ophthalmic surgeon to the hospital.

Dr. Brailey was Hunterian professor at the Royal College of Surgeons of England in 1885–86. He took a very prominent part, with Bowman, Hutchinson, Nettleship, and others, in founding the Ophthalmological Society in 1880, and at various times since filled the several offices of vice-president, secretary, and councillor. During the earlier part of its existence he made many notable contributions to its Transactions. In 1890 he was awarded (jointly) the Middlemore prize of the British Medical Association, and later he received the welcome distinction of an honorary Fellowship at his old college.

Dr. Brailey leaves a widow, Agnes, daughter of Mr. John Robertson, and two sons, both members of the medical profession, who are serving their country, one in the navy and the other in the army.

The funeral took place at Warbleton.

BRISTOL EYE DISPENSARY.—At the annual meeting of this dispensary held recently the medical and financial reports were found to be satisfactory. The committee stated that Mr. E. H. E. Stack, who relinquished the surgeoncy of the Eye Dispensary when he was made full surgeon at the Bristol Royal Infirmary, had been re-elected surgeon to the Eye Dispensary, his position of ophthalmic surgeon at the infirmary allowing him to take both appointments.

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE SOCIETY.—The thirty-second annual meeting of this society was held at the offices in High Holborn, London, W.C., on March 30th. The President, Dr. F. de Havilland Hall, having declared the chairman, vice-chairman, and treasurers re-elected, called on Dr. F. J. Allan to preside. Dr. Allan declared the remaining members of the committee duly elected. The chairman announced that over 300 members of the society were serving in the various forces of the country. The society had had a very successful year. There had been 276 new proposals, and the total membership at the end of the year was 3255. The gross premiums received in the Sickness Fund amounted to £24,190, while £15,931 had been paid in claims. The funds now exceeded £266,500. After some discussion the report and audited accounts were unanimously adopted.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

THE Fund continues to receive solid support. A letter which has reached the treasurer from Dr. D. Colquhoun, of Dunedin, explains an anonymous contribution of £300 whose receipt was announced on Feb. 27th. The sum was subscribed by doctors, chemists, nurses, and the public of Otago, New Zealand, and was received by the Fund in response to a cable to Lloyds Bank. Such support from New Zealand is particularly gratifying, while we learn from Dr. Colquhoun's letter that he hopes to add further to this handsome contribution, as subscriptions are still coming in to him.

THE WEEK'S SUBSCRIPTIONS.

The subscriptions received by Dr. Des Vœux up to Tuesday evening last, in addition to those previously acknowledged, and not including money collected by the Scottish and Irish Funds, are as follows:—

	£	s.	d.
Birmingham Local Committee (per Dr. Robt. Saundby, Hon. Sec.) (fourteenth donation, total £375 10*s.* 3*d.*)—			
"A Friend"	10	0	0
Dr. T. and Mrs. Halford Wilkins, proceeds of Whist Party	10	10	0
Dr. C. S. Rigby	5	0	0
Dr. Waddell	5	0	0
Dr. Walter Allen... ...	5	0	0
Dr. Oswald R. Lewis...	1	1	0
Mr. J. P. Ellerington (La Pharmacie Française) (sixth donation, total £45)	5	0	0
Rotherham Division, B.M.A. (per Dr. Knight, Hon. Sec.)—			
Dr. Ling	1	1	0
Southern Branch, B.M.A. (per Dr. Jas. Green, Hon. Sec.)—			
Dr. J. Lister Wright...	1	1	0
Dr. W. J. Jolliffe ...	1	1	0
Dr. E. W. Simmons ...	2	2	0
Dr. F. W. H. Robson	0	10	6
Dr. M. Treston	1	1	0
Dr. A. Kennedy	0	10	6
Dr. J. H. Pridham ...	0	5	0
Dr. J. Davidson Wyness	1	1	0
Dr. J. Fletcher	0	10	0
Dr. Annie M. Black ...	1	0	0
Dr. T. L. Kennish	1	1	0
Dr. Charles H. East ...	2	2	0
South Eastern Counties (Scotland) Division, Edinburgh Branch, B.M.A. (per Dr. M. J. Oliver, Hon. Sec.) (2nd donation, total £51 5*s.*)			
Collected by Dr. G. Gunn Bannerman, Hawick—			
Dr. Barrie	2	2	0
Dr. S. G. Davidson ...	2	2	0
Dr. Dixon	2	2	0
Dr. Bannerman	2	2	0
Mr. D. C. Michie ...	2	2	0
Mr. Geo. Cairns	1	1	0
Mr. W. E. Wilson ...	1	1	0
Mr. G. P. Ross	1	1	0
Mr. W. J. Kearney ...	1	1	0
Mr. John P. Scott ...	1	1	0
Dr. Evans (second donation)	2	2	0
Collected by Hon. Sec.—			
Dr. Cullen	1	1	0
Dr. McInnes	0	10	0
Bournemouth Division, B.M.A. (per Dr. Eleanor C. Bond, Hon. Sec.) (total £99 2*s.* 6*d.*)—			
Dr. C. B. Mooring Aldridge	1	0	0
Dr. W. Alexander ...	2	2	0
Dr. G. H. Batterbury	1	1	0
Miss Bond, M.D. (second donation) ...	2	2	0
Dr. F. C. Bottomley...	5	0	0
Dr. R. T. Bowden ...	1	1	0
Dr. F. J. Burge	0	10	6
Dr. A. E. Carsbery ...	1	1	0
Dr. T. Compton	1	1	0
Dr. A. H. Davis	1	1	0
Dr. H. Dobell	1	0	0
Dr. P. Duncan	10	10	0
Dr. F. Fowler	5	0	0
Dr. and Mrs. W. Gosse	1	1	0
Dr. G. S. Halton... ...	1	1	0
Dr. A. Lattey	2	2	0
Dr. E. K. Le Fleming	1	1	0
Dr. N. McGillicuddy	1	1	0
Dr. E. E. Maddox ...	1	1	0
Dr. T. Martland	1	1	0
Dr. S. Montgomery ...	1	0	0
Dr. C. D. Muspratt (second donation) ...	3	3	0
Dr. C. W. Parkinson...	1	1	0
Dr. S. Powell	2	2	0
Dr. H. T. Pringle ...	2	2	0
Dr. F. Winson Ramsay	10	10	0
Dr. T. Richardson ...	1	1	0
Dr. B. Shillitoe	3	3	0
Dr. H. Simmons ...	10	10	0
Dr. Telford Smith ...	1	1	0
Dr. Johnson Smyth ...	0	10	0
Dr. A. de W. Snowden	10	0	0
Dr. C. Thomson	1	1	0
Dr. Roberts Thomson	10	0	0
Dr. Medley Wood ...	1	1	0
Dr. G. D. H. Carpenter Capt., Uganda Medical Service (will subscribe £1 monthly)...	1	0	0
Dr. T. W. Locket	1	1	0
Dr. William Angus ...	1	1	0
"E. B. H."	1	1	0
Manchester and District Subcommittee (Supplementary) (per Dr. Brockbank, Hon. Sec.) (total £583 0*s.* 5*d.*)—			
Dr. Craven Moore ...	5	5	0
Dr. Dowzer	1	1	0
Mr. C. E. Hecht... ...	0	5	0
North of England Branch (per Dr. James Don and Mr. A. S. Perceval, Hon. Secs.) (seventh donation, total £333 3*s.*)—			
Dr. W. W. Williams ...	1	1	0
Dr. F. C. Pridham ...	1	1	0
Dr. Lillie Johnson ...	1	1	0
Dr. J. J. Archbold ...	1	1	0
Dr. H. Baigent	2	2	0
Dr. H. K. Wallace ...	1	1	0
Anonymous	2	2	0
Canterbury and Faversham Divison, B.M.A. (per Dr. Neil Robson, Hon. Sec.) (third donation)—			
Dr. E. A. McAnally ...	1	1	0
Dr. W. P. Dickson ...	1	1	0
Queensland Section of the Australasian Pharmaceutical Conference (per Agent-General)	100	0	0
Mr. H. A. Watkinson ...	0	10	6
Hull Pharmaceutical Association, collected by the (per Mr. T. W. Robinson)—			
Mr. W. Staning	1	1	0
Mr. B. M. Stoakes ...	0	10	6
Messrs. Lofthouse and Saltmer	5	5	0
Mr. R. B. Sawyer ...	0	10	6
Mr. A. P. Metcalfe ...	0	10	0
Mr. E. H. Earle	1	1	0
Mr. T. H. Newton ...	0	10	6
Mr. J. J. Spilman ...	1	1	0
Mr. C. Brameld	0	10	6
Messrs. Selle and Idon	1	1	0
Mr. T. Smith	1	1	0
Messrs. Smith and Nephew	2	2	0
Mr. A. Richardson ...	1	1	0
Mr. E. Fowler	0	5	0
Mr. W. H. Walton ...	0	10	6
Mr. J. F. Robson ...	1	1	0
Mr. J. W. Podmore ...	0	10	6
Mr. T. H. Good	0	5	0
Mr. H. Leggott	0	10	0
Mr. J. Tiffany	0	5	0
Mr. A. T. Thirsk ...	0	5	0
Mr. A. J. Wharton ...	0	10	6
Mr. Chapman	1	1	0
Mr. A. Bennett	0	10	0
Mr. W. H. Buck ...	0	10	6
Mr. F. L. Smith	1	1	0
Mr. E. C. Foster ...	0	5	0
Mr. L. B. King	0	5	0
Mr. T. W. Cockrill ...	0	5	0
Mr. Walls	0	5	0
Mr. J. T. Lincoln ...	0	10	6
Mr. T. W. Agar	0	5	0
Mr. A. Howe	0	5	0
M. Zebb...	0	5	0
Mr. S. Heath	0	7	6
Mr. G. Hoyles	0	10	0
Mr. A. D. Markham ...	0	5	0
Mr. J. R. Foster... ...	0	5	0
Mr. C. D. Brighouse...	0	7	6
Mr. Jackson...	0	10	0
Mr. Jones	0	10	6
Mr. J. E. S. Studdaby	0	10	6
Mr. T. W. Robinson ...	1	1	0
Mr. Schofield	0	5	0
Mr. G. A. Hebblethwaite	0	5	0
Mr. G. R. Newton ...	0	5	0
Mr. E. Ryley	0	2	6
Mr. J. S. Sayers... ...	1	1	0
Mr. F. Kirkus	0	2	6
Mr. Kenny	0	5	0
Mr. E. S. Perkins ...	0	7	6
Hull Pharmacists' Association Funds ...	5	0	0
Sheffield Pharmaceutical and Chemical Society, collected by (per Mr. S. Furnival) (second donation)—			
Mr. J. Gilbert Jackson	1	1	0
Mr. F. G. Roebuck ...	0	10	0
Mr. E. C. Knowles ...	0	7	6
Mr. E. S. Seaborne ...	0	5	0
Mr. J. H. Meadowcroft	0	5	0
Mr. J. W. Lofthouse...	0	5	0
Mr. T. Miner	0	10	6
Mr. J. S. Oswald ...	0	10	0
Mr. T. Cockshot... ...	0	2	6
Mr. J. B. Whitby ...	0	2	6
Mr. J. E. Alcock... ...	0	2	6
Messrs. J. P. Hewitt and Son	0	2	6
Mr. T. W. Hodges ...	0	2	6
Mr. J. T. Appleton ...	0	5	0
Mr. J. Dale	0	5	0
Mr. J. A. Johnson ...	0	5	0
Mr. G. K. Robinson ...	0	2	6
Mr. G. Robinson ...	0	2	6
Mr. J. Chadwick... ...	0	2	6
Mr. E. H. Swift	1	1	0
Mr. S. Eyre	0	2	6
Mr. H. Williams... ...	0	2	6
Mr. F. H. Fox	0	2	6
Mr. J. H. Wright ...	0	5	0
Mr. W. B. Stather ...	0	5	0
Mr. E. A. Craven ...	0	2	6
Messrs. G. T. W. Newsholme, Ltd.	2	2	0
Mr. J. Preston	2	2	0
Mr. W. E. Heaton ...	0	10	6
Mr. G. Squire	1	1	0
Mr. J. Evans, F.I.C....	0	10	6
Mr. J. C. Gibson... ...	0	5	0
Mr. H. B. Hammond...	0	5	0
Messrs. Smith and Gill	0	10	0
Mr. H. Bown	0	5	0
Mr. R. Dixon	0	10	0
Mr. B. Ellis	0	10	0
Mr. J. H. Bradwell ...	0	2	6
Mr. W. P. Arnott ...	0	2	6
Mr. Walton	0	2	6
Mr. A. H. Culverhouse	0	5	0
Mr. J. F. Eardley ...	1	1	0
Mr. S. Furnival	0	10	0
Mr. J. F. Simon	0	5	0
Mr. J. S. Burnell ...	0	2	6
Mr. W. S. Campbell ...	0	2	6
Mr. J. B. Pater	0	2	6
Mr. L. B. Henderson	0	5	0
Mr. A. R. Powell ...	0	5	0
Mr. J. H. Holton ...	0	2	6
Mr. H. Antcliffe... ...	0	5	0
Mr. H. G. Williams ...	1	1	0
Mr. S. Lowe	1	1	0
Mr. R. H. Field	0	1	0
Mr. H. T. Watt	0	2	6
Mr. S. Paddon	0	5	0
Mr. E. G. Douthwaite	0	5	0
Mr. G. R. Airey	0	5	0
St. John Ambulance Association Indian Council (per Major R. J. Blackham, C.I.E.)	25	0	0
Mr. Cedric Chivers (per Mr. J. Y. W. MacAlister), Brooklyn, N.Y.	25	0	0
Captain R. D. MacGregor, I.M.S. ...	5	0	0
Dr. Craven Moore	5	5	0

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham-gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Ltd. £10,012 had passed into the treasurer's hands by Tuesday last, the sum not including the Scottish and Irish Funds.

THE APPEAL FOR SURGICAL INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge the receipt of surgical instruments kindly contributed by Professor Shennan, Aberdeen University; Mr. Horatio P. Symonds, Oxford (per Professor Thomson); Anonymous, Bristol; and Dr. Daniel, Hull (per the Voluntary Aid Committee).

THE UNIVERSITY CHAIR OF PHYSIOLOGY AT ST. BARTHOLOMEW'S HOSPITAL MEDICAL SCHOOL.—Applications for this chair must be received by the academic registrar, University of London, South Kensington, S.W., not later than the first post on May 3rd. Twelve copies of the application must be sent together with the names of not more than three references, but testimonials are not required. The salary is £600 a year.

The War.

THE BATTLE OF NEUVE CHAPELLE: SIR JOHN FRENCH'S DISPATCH.

Sir John French's dispatch, dated April 5th, which was brought to London by H.R.H. the Prince of Wales, contains a warm commendation of the work of the Royal Army Medical Corps and of the Army Medical Service. The following extract from the dispatch will be read with gratification by all members of the medical profession:—

Health of the Army.

Since the date of my last report the general health of the army has been excellent; enteric has decreased, and there has been no recurrence on any appreciable scale of the "foot" trouble which appeared so threatening in December and January. These results are due to the skill and energy which have characterised in a marked degree the work of the Royal Army Medical Corps throughout the campaign, under the able supervision of Surgeon-General T. J. O'Donnell, D.S.O., Deputy Director-General, Medical Services. But much credit is also due to divisional, brigade, regimental, and company commanders for the close supervision which has been kept over the health of their men by seeing that the precautions laid down for the troops before entering and after leaving the trenches are duly observed, and by the establishment and efficient maintenance of bathing-places and wash-houses, and by the ingenious means universally employed throughout the forces to maintain the cleanliness of the men, having regard both to their bodies and their clothing. I have inspected most of these houses and establishments and consider them models of careful organisation and supervision. I would particularly comment upon the energy displayed by the Royal Army Medical Corps in the scientific efforts they have made to discover and check disease in its earliest stages by a system of experimental research, which I think has never before been so fully developed in the field. In this work they have been ably assisted by those distinguished members of the medical profession who are now employed as military medical officers, and whose invaluable services I gratefully acknowledge. The actual strength of the force in the field has been increased, and the health of the troops improved by a system of "convalescent" hospitals. In these establishments slight wounds and minor ailments are treated, and men requiring attention and rest are received. By these means efficient soldiers, whose services would otherwise be lost for a long time, are kept in the country, whilst a large number of men are given immediate relief and rest when they require it without removing them from the area of operations. This adds materially to the fighting efficiency of the Forces.

Army Medical Service and Hospitals.

The principal convalescent hospital is at St. Omer. It was started and organised by Colonel A. F. L. Bate, Army Medical Service, whose zeal, energy, and organising power have rendered it a model hospital of its kind, and this example has materially assisted in the efficient organisation of similar smaller establishments at every Divisional Headquarters.

I have already commented upon the number and severity of the casualties in action which have occurred in the period under report. Here once again I have to draw attention to the excellent work done by Surgeon-General O'Donnell and his officers. No organisation could excel the efficiency of the arrangements—whether in regard to time, space, care and comfort, or transport—which are made for the speedy evacuation of the wounded.

THE WAR AND MEDICAL RECIPROCITY WITH CANADA.

Since the meeting of the Executive Committee of the General Medical Council of Feb. 22nd, 1915, it has been learnt unofficially that a Bill to Amend the Ontario Medical Act and to provide for the registration in Ontario of Medical Practitioners qualified in the United Kingdom has been introduced in the Provincial Legislature by the Attorney-General. The progress of the measure has not yet been announced. Movements towards the establishment of reciprocity have also been taken by other Provinces. On March 24th, 1915, a cable was received from the College of Physicians and Surgeons of the Province of British Columbia stating that their Medical Council had passed a resolution authorising reciprocal arrangements with the United Kingdom. This was confirmed in a letter written on the next day by their Registrar, in which the following phrases show how exactly the situation is being understood in the Dominion:—

> It has been felt for some time that in view of the present conditions, brought on largely by the war, there ought to be reciprocity between this country and Great Britain in order that there may be no question as to the standing of our men serving in Britain or on the continent. It was felt, further, that this was a very fitting time, when every part of the empire is trying to do its best to assist, to bring this matter to a conclusion, and our desire was accordingly cabled to you. It will, of course, be necessary to pass an amendment to our Medical Act. I saw the Attorney General of this Province last night, and he gave me the assurance of his Government that this would be done."

Further, on April 4th, 1915, a cable was received by the General Medical Council from the Registrar of the College of Physicians and Surgeons of the Province of Saskatchewan stating that their Medical Council desired reciprocity, and requesting the General Medical Council of Great Britain to outline procedure. This was at once done, and the much-desired medical reciprocity between Canada and the United Kingdom is now approaching accomplishment, owing to the activity of the General Medical Council and the patriotic sense of Canada.

THE CASUALTY LIST.

Captain D. M. C. Church, I.M.S., is reported as having been wounded in the recent fighting with the Turks in Mesopotamia.

THE COÖPERATION OF CIVIL AND MILITARY AUTHORITIES IN SANITARY MATTERS.

A circular upon this important subject, issued by the Local Government Board this week to county councils, sanitary authorities, port sanitary authorities, and medical officers of health, begins by publishing the gratifying letter from the Assistant Secretary of the Army Council to the Local Government Board which will be found on p. 819 of this issue of THE LANCET.

The circular of the Board cordially endorses the expression of appreciation of the Army Council, and hopes that the assistance which has been rendered will be continued and extended, as "changes in the number or personnel of troops in the area will frequently call for immediate reconsideration or modification of existing arrangements."

The Board take the opportunity of this circular to refer to matters which, in their opinion, it is desirable that local authorities and their officers should give special attention to. The circular runs as follows:—

> *District councils and district medical officers of health.*—Attention is particularly drawn to paragraph (1) on the second page of the Board's Circular (No. 1) as to the duty of district medical officers of health to inquire for and bring at once to the notice of the sanitary authority any conditions in which sanitary services can be rendered by the authority to the military population, and also to the importance of prompt action by the authority on receipt of such reports.

In respect of charges for such services the Board would again insist on the necessity that no urgent sanitary work should be postponed for consideration of the items which may be the subject of charges to the military authorities. For the guidance of sanitary authorities they have included among the appended documents a letter from the Army Council of 31st October, 1914 (No. 3), as to the principles of payment from army funds of charges by local authorities for increased expenditure on sanitary services rendered to troops. The question of payment for professional services of medical officers of health, inspectors of nuisances, &c., is referred to in paragraph 6 (*b*) of that letter. In this instance also the Board consider that the Council should not, pending the adjustment of any application which they may make for reimbursement from army funds, delay the payment to these officers of such sums as may be necessary to recoup them for additional time or special expenses of travelling incurred in the inspections and inquiries, which are essential if the desired coöperation is to be effectively established and continued. The Board will be glad to advise the Council in any case of difficulty arising in these matters.

The attention of district medical officers of health is then directed to the following:—

County councils and county medical officers of health.—The Board and the Army Council attach much importance to the work which has already been done by county medical officers of health in assisting the military authorities in the provision or "pooling" of isolation hospital accommodation, or of arrangements for disinfection within the county, the investigation of infectious disease, the protection of water-supplies, and like matters, and they are desirous that this work should be continued and amplified. With this object the county medical officer of health should obtain from the district medical officer of health each week information (*a*) of the occurrence of any military cases of infectious disease which have come to his knowledge in the district, and (*b*) of any new movements of troops into or out of the district which are known to him. District medical officers of health should give to the county officer any information as to the camps or billeted troops which will assist the latter officer to determine where his assistance may be most needed, and where visits of inspection by him are desirable. It is important that the county medical of health should visit (wherever practicable in conjunction with or after communication with the district medical officer of health) any large camps or important billeting centres. The Board would be glad to receive copies, at the time they are made, of any representations which the county medical officer of health considers it necessary to make, separately or jointly with the district medical officer of health, to the military authorities (No. 1, p. 10), or to sanitary authorities in the county.

Arrangements for bacteriological examinations of contact cases of cerebro-spinal meningitis.—In connexion with the prevalence of cerebro-spinal meningitis in the civil population, some councils, on the advice of their medical officer of health, have already made arrangements for the visits of a bacteriologist to any affected area, and for laboratory examination of material obtained from the contacts of cases of cerebro-spinal meningitis. The Board consider this action of much utility at the present time, alike in the interests of the civil and of the military population, and they trust that it will be actively pursued and extended wherever necessary. Corresponding arrangements have been made by the Army Council for military cases.

The circular proper closes by intimating a similar coöperation to that existing between the Local Government Board and the Army Council, between the Board and the Lords Commissioners of the Admiralty.

Appended to it, with the consent of the Army Council and the Home Office, are extracts from official documents which may be of use to local authorities in the circumstances. This appendix contains:—

(1) Reprint of Local Government Board Circular, Oct. 21st, 1914 (general system of coöperation); (2) letter from Army Council to General Officers Commanding, Oct. 10th, 1914 (general system of coöperation); (3) letter from Army Council to General Officers Commanding, Oct. 31st, 1914 (payment of charges for sanitary services); (4) Local Government Board Memorandum to Army Council, Dec. 1st, 1914 (as to some results of inspection; circulated by the Army Council); (5) extracts from "Rules as to Billeting" (issued with Army Orders, Dec. 1st, 1914); (6) letter from Home Office to Chief Constables, March 6th, 1915 (as to importance of observing Rule 21 as to billeting); (7) letter from Army Council to General Officers Commanding, Oct. 18th, 1914 (payment for military cases in isolation hospitals); (8) letter from Army Council to General Officers Commanding, Dec. 23rd, 1914 (additions to isolation hospitals); (9) letter from Army Council to General Officers Commanding, Oct. 1st, 1914 (inspection of food); (10) letter from Army Council to General Officers Commanding, March 3rd, 1915 (as to means for reducing overcrowding in huts and billets).

The first of these reprints recapitulates a circular letter issued by the Local Government Board on August 31st,[1] which, in setting out the lines of action on which medical officers of health should coöperate with the military sanitary services, comprised the following points:—

(1) That each medical officer of health should place himself in communication with the local military authorities offering his services; (2) that each medical officer of health should give information and assistance to military sanitary officers as to water-supplies, disposal of refuse, drainage and conservancy arrangements, control of infectious disease, &c.; (3) that the assistance of the sanitary inspector should be secured; (4) a system of inter-notification of infectious diseases, both by military and civil sanitary officers, was arranged; (5) the value of antityphoid inoculation was indicated; (6) the probable need for increased hospital accommodation for small-pox and enteric fever was emphasised; (7) the services of the medical staff of the Board were offered to medical officers of health for consultation, and local visits by medical inspectors were announced.

The circular letter adds that the officers concerned acted promptly upon that letter, and after recapitulating the prescribed duties of the medical officers of health, proceeds to indicate that the duties of the district medical officer of health of a sanitary district in which troops are quartered should include:—

1. Inquiring for and bringing to the notice of the sanitary authority any conditions in which sanitary services can be rendered by them to the military population—e.g., by extending water mains, opening or extending sewers, providing latrines or baths, providing hospital accommodation for cases of infectious disease, disinfecting clothing and blankets, destruction of refuse, making special arrangements for scavenging. Reports on these matters should be dealt with as urgent, and special meetings of the local authority should be called to consider them if necessary. Copies of all such reports should be sent to the Board.

2. Inspecting systematically billets and also camps or other places solely in military occupation as to water-supply, methods of disposal or removal of all solid and liquid refuse, general cleanliness, and for the prevention of exposure to infection.

3. Taking action by recommendations to the military authorities, by reports to the sanitary authority, or otherwise, with a view to the removal of any dangerous or objectionable conditions.

4. Giving information to the medical officer with the troops as to local cases of infectious disease as soon as they come to knowledge, and as to any localities, premises, bathing places, &c., which on health grounds should not be frequented by soldiers. In some districts troops will need to be cautioned against the consumption of sewage-polluted shell-fish. Two copies of the Board's weekly report as to infectious disease will be sent to each medical officer of health. One of the copies should be handed to the medical officer locally in charge of troops, in addition to the immediate notifications indicated above.

5. Ascertaining in association with the county medical officer of health what hospital provision is available for cases

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[1] THE LANCET, Oct. 31st, 1914, p. 1053.

> of infectious disease among troops in the district, and assisting in making arrangements for such provision. Existing civil resources should be made available to the greatest practicable extent for infectious cases among troops, care being taken not to diminish the accommodation for the civil population unduly.

The rest of this valuable reprint deals with the precautions to be taken by the sanitary executive in respect of the establishment of billets; the value which the services of the county medical officer will be to the military authorities by virtue of his consulting relations with district medical officers; and the machinery by which the recommendations of medical officers of health should be made to the military authorities.

The second reprint is a letter from the War Office enjoining upon general officers commanding in chief the necessity of coöperation in reference to the quartering and encampment of troops with the civil sanitary authority; and the third is an expansion of the same subject, whence the following may be quoted:—

> 1. As already pointed out in previous correspondence, it is necessary that there should be the closest coöperation between the civil and military sanitary officers in coordinating sanitary measures necessitated by the sudden influx of a large additional population.
>
> 2. In many cases it will not be possible to dissociate civil from military services, and, wherever it can be arranged, the sanitary services for the combined population should be carried out by the civil authorities. The adjustment of additional expenditure thus thrown on the local authorities will be carried out on the following lines.
>
> 3. The cost of additional scavenging in connexion with premises occupied by troops, whether hired premises or billets, may be refunded to local authorities, preferably at an arranged rate, based on the number of troops in occupation, rather than in the form of an account of expenses of actual collection, cost of appliances, disinfectants, &c.; cases of difficulty may be referred to the War Office for instructions.
>
> 4. The actual cost of special services specifically performed for the troops, such as the erection of latrines, extending water mains, &c., may also be refunded.
>
> 5. It is recognised that considerable additional expenditure of a recurrent nature may be incurred in connexion with various sanitary services, which, although not connected with the premises occupied by the troops, arise definitely out of military requirements—e.g., it may be necessary, in the interests of the health of the military as well as of the civil community, when large numbers are in billets: (*a*) to arrange more frequent clearances from all houses, whether occupied as billets or not; (*b*) to incur additional expenditure in connexion with professional services of medical officers, inspectors of nuisances, &c. Wherever practicable, such measures should be arranged beforehand between the military and civil authorities, and the additional cost may be refunded, provided general officers commanding are satisfied as to the reasonableness of the measures taken and of the amount claimed.
>
> 6. In the case of expenditure under 5 and 6, regard should be had to the fact of the continuous payments under paragraph 4. (Indeed, it may be possible in some cases to provide for such expenditure by inclusion in the arranged rate suggested in that paragraph.) In this connexion, however, Army funds should not be called upon to meet expenditure on special measures which are really necessitated by the inadequacy of *existing* sanitary conditions, and which may be aggravated, but not specifically created, by the increase in population; any case of dispute in this respect should be referred to the War Office.
>
> 7. For the present all claims on account of capital expenditure, other than those contemplated at paragraph 5, should be referred to the War Office with a full report of the circumstances and the recommendations of general officers commanding.
>
> 8. Arrangement should be made, as a rule, for local authorities to submit monthly claims of recurrent expenditure. Claims for capital expenditure should be rendered separately.

The letter closes by saying that only general lines are indicated, that economy must be preserved, and that everything said refers equally to detention camps.

The fourth reprint is a report from the Local Government Board with respect to inquiries in camps and localities occupied by troops up to Nov. 30th, the inquiries having been made by the inspectors of the Local Government Board. The examination of the various billets was obviously undertaken with considerable vigour.

The fifth reprint consists of extracts from the rules of billeting, which were issued with army orders last December.

The last five reprints are very brief, and the summary already given indicates their purport.

A valuable addendum to the circular letter consists of notes on the inspection of billets and camps by medical officers of health. On these we comment in a leading article upon the whole document.

ROYAL COLLEGE OF SURGEONS IN IRELAND AND THE WAR.

An emergency meeting of the Royal College of Surgeons in Ireland was held on March 31st to grant licences to students who had recently qualified. The licentiates having been admitted, the President, Mr. Conway Dwyer, referred to the services rendered by members of the College in the present war. One of the objects of the College, as set out in the original charter, was "to provide a sufficient number of properly educated surgeons as well for the service of the public in general as for that of our navy and army." At the present time over 600 Licentiates of the College held commissions in the Royal Army Medical Corps. No less than 28 of these had been mentioned in despatches in the present war; three had been made Companions of the Order of St. Michael and St. George; four had received the Distinguished Service Order; and one, Captain W. F. M. Loughnan, R.A.M.C., had been the first medical man to receive the Military Cross, "for gallantry on many occasions in Flanders in assisting to rescue the wounded whilst exposed to heavy fire." Captain Loughnan, who was present, being at home wounded, was heartily congratulated.

NOTES FROM THE GERMAN MEDICAL PAPERS.

The following notes have been sent to us by a correspondent in a neutral country who has been able to secure copies of German and Austrian medical journals:—

> A sign of the times is the shifting of interest in the treatment of tetanus and other anaerobic infected wounds to the prophylaxis and treatment of typhus, including in the term both T. abdominalis (our typhoid fever) and T. exanthematicus (gaol and famine fever.) The usual expectant treatment of typhoid fever has sufficed to give excellent results in the military hospital at Strassburg, under Professor von Tabora, the death-rate being scarcely above 5 per cent., and comparing favourably with peace statistics. Not a single case of infection of the staff had been observed, a result attributed to the daily inspection of the 200 helpers, when all had to show their hands; this was before prophylactic inoculation was practised. The diet was limited to 5–7 cups of milk daily (each of 180–200 c.c.), with 4–5 cups of fairly thick gruel. Bath treatment was found impracticable with the available helpers, and had been entirely replaced by pyramidon internally; 7 tablespoons of a 1 per cent. solution in 24 hours (= 1·05 grm. daily), gradually reduced but not omitted until the fifth to seventh day of defervescence. Heart failure was avoided by giving digitalis early in all cases, six times

0·1 grm. of digipuratum, the tolerance being extraordinary, and the mortality from intoxication or heart failure less than 1 per cent.

Professor Goldscheider, a physician with the army, reports on the vaccine treatment of typhoid, having been induced to try it by the experience of a prophylactic dose which happened to fall in the prodromal period. The Marx vaccine was used in a dose of 250–750 million bacilli. Fifty-seven cases were so treated, and in 55 out of 70 injections a remission of fever followed on the first to third day, lasting an average of two days, and sometimes coinciding with the final defervescence. In the remaining cases there was an increase of fever, but not of a serious character. Otherwise no special effect on symptoms was observed, the local reaction being less than in the healthy subject. Nor was any influence of a previous prophylactic inoculation to be observed. Unfortunately in the more severe cases of disease only the smaller doses of vaccine could be employed. Dr. M. Rhein records a smaller series of cases at Strassburg using the Halle vaccine diluted 1 in 20, a dose of 0·6 to 1·4 c.c. into the ulnar vein. In 94 per cent. of patients a rise of temperature with rigor followed in from half an hour to 2½ hours with subsequent rapid defervescence. Nine cases out of 33 were completely successful with one injection, another case with two—in all a high eosinophilia (100–200 cells per c.mm.) being noted along with an absolute leucopenia.

From Professor Ziegler's hospital at Freiburg i.Br. comes an encouraging account of an attempt at auto-serum-therapy. 50 c.c. of blood were withdrawn, phenolised, and 2·5 to 4 c.c. of the serum injected daily sub cutem on the outer side of the thigh. In 14 out of 18 cases improvement was rapid, the temperature falling in 2–5 days, often with marked sweating, coma especially clearing after three or four injections, the patients expressing great relief. The cases so treated were nearly all severe ones, but were all able to be up within four weeks; twice a sudden drop of 2·5° C. was noted with small but not frequent pulse, amenable to camphor. This, as well as the therapeutic effect in general, is to be probably ascribed to bacteriolysis, an explanation given by Hammerschlag as early as 1893. Professor Matthes, of Marburg, is working with a trypsin solution of typhoid bacilli filtered clear as an immunising agent, which has already given encouraging results with guinea-pigs. Writers all assume that the merits of the prophylactic inoculation are still on trial, and that it will still be long before exact figures are available. Of immediate effects the percentage of serious harm is very low. Under Professor Penzoldt at Erlangen, out of 4000 injections in 1780 persons only 6·8 per cent. had fever above 38° C. and 0·2 per cent. above 39° C. In two cases, aged 28 and 33 years, thrombosis occurred once in the forearm, and once an embolic thrombus of the leg. In a third case, a few hours after the second prophylactic injection, the temperature rose to 39·6° C., followed by typical splenic enlargement, roseolar rash, and bronchitis and exitus 14 days later from intestinal hæmorrhage. Menzer had already recorded a case with diarrhœa and roseola, and Professor Penzoldt inclines to the assumption of an aggressin action of the dead bacilli on a concurrent living infection. At Strassburg Professor Schlesinger, out of 1340 injections, never saw any serious local reaction; after the three injections 5 per cent., 3 per cent., and 2 per cent. respectively were unfit for service on the following morning, the indisposition differing from influenza in that improvement was almost always noted within 24 hours. Urticaria was not very uncommon, and in 5 to 8 per cent. the spleen was enlarged. Professor Weichardt (Erlangen) finds that local reaction is slighter with the newer vaccines sterilised at a lower temperature, there being no appreciable risk in their employment, as 0·5 per cent. phenol kills any living bacilli in the vaccine within 24 hours. Smaller doses at longer intervals will probably immunise as fully as larger ones at shorter interval.

The Temporary Employment of Members of School Medical Staffs in Military Hospitals.—The Board of Education has issued a circular to local education authorities alluding to the urgent need for more medical men in order fully to staff the additional hospitals required by the large forces now being placed in the field. In response to a question whether the Board would be prepared to facilitate the volunteering of officers of the School Medical Service for this hospital work the circular says that in cases where a school medical officer is also a medical officer of health, the Local Government Board must be consulted. So far, however, as the Board of Education is concerned, it assents freely. Should any school medical officer desire to volunteer the Board will raise no objection to his doing so even though his temporary absence may cause dislocation of the school medical service, assuming that local educational authorities will regard the matter in the same light and will give any medical officer, who desires to volunteer, leave of absence on such terms as will not involve any loss in his salary, status, or tenure. Arrangements can be made by which officers of the School Medical Service who join the Royal Army Medical Corps will be employed for home service only if they so desire, while they can offer themselves for service in military hospitals as civilians. In view of the pressing need for further medical assistance, facilities are being given to medical men who are serving as combatant officers in the Territorial Forces to transfer their services to the Royal Army Medical Corps of the Regular Army.

Vacancies for Medical Officers.—We are asked to state that medical men are urgently wanted for the R.A.M.C. (T.) 2nd London Division for the Sanitary Service, in the Field Ambulances, and also as regimental medical officers. Candidates for the Sanitary Service should possess the D.P.H. or have had some special training in preventive medicine. Those joining the Sanitary Service especially are likely to have an early opportunity of serving abroad. Applications should be made in writing, or preferably in person, to the Officer Commanding, Depôt Medical Units, 2nd London Division, Duke of York's Headquarters, Chelsea, S.W., who will be pleased to see intending applicants any day between 9.30 A.M. and 5 P.M.—Three medical men are urgently required to complete the establishment of the 2/1st Highland Mounted Brigade Field Ambulance, R.A.M.C. (T.). Full particulars as regards pay, duties, &c., will be given by Captain A. Mowat, officer commanding, 2/1st H.M.B.F.A., R.A.M.C., Houghton Hill House, Houghton, Huntingdon.

Relief Work in Serbia.—Sir Ralph Paget, who has been Assistant Under Secretary for Foreign Affairs since 1913, and has had an extensive experience in the diplomatic service since 1888, has been appointed British Commissioner for Red Cross relief work in Serbia, and will work under the joint committee of the Red Cross Society and the Order of St. John of Jerusalem. His wife, Lady Paget, who contracted typhus fever during her hospital work in Uskub, is happily now convalescent.—It has been announced that Dr. Ernest Magruder, of Washington, D.C., who, in company with other American medical men, went to render aid in Serbia, has succumbed to typhus fever there. Sister Augusta Minshull, of the Scottish Women's Hospital in Serbia, has also fallen a victim to the disease.

A meeting will be held in aid of the London Unit, Scottish Women's Hospitals for Serbia, on Monday, April 26th, at 8.30 P.M., at St. Marylebone Institute, 50, Paddington-street, W. Mr. Welby Fisher, of the Serbian Unit, British Red Cross, 1913, will give a lecture, illustrated by lantern slides, entitled "With the Serbians." Dr. Inglis will report on the work of the hospitals, prior to leaving for the front. Miss Cristitch, who has just returned from Serbia, will take the chair. Tickets of admission may be had on application to Mrs. F. W. Mott, 25, Nottingham-place, W.

Non-Alcoholic Buffets for Workers.—In a letter to the *Times* Mr. Howard Marsh suggests (in view of the proposed self-denying ordinance, with or without prohibition) the establishment of non-alcoholic buffets for workers, such as have already justified themselves in numerous centres where soldiers are quartered. The services of the Y.M.C.A. have been of the highest value in this direction. "In one of their institutions," he says, "or in some other sufficiently large room (in other cases tents have been used), a buffet has been provided, staffed, most willingly, by volunteers attending in relays, in many instances from 6 A.M. to 10 P.M. Three or four business workers have ordered in, and taken charge of, the supplies, and someone, used to accounts, has collected the daily takings, paid them into the bank, kept the books, and prepared them for audit. A tariff sheet has been so placed that it could be easily inspected. Sausage rolls, beef pies, ham sandwiches (of a size amply sufficient for "a snack at the bar") cost 2*d.*, a large cup of coffee and hot milk 1½*d.*, all other items—cake, plain bread and butter, and many others—1*d.* or less. A buffet worked on these lines, and when numbers are considerable, is quite a paying concern. As the items afford a good choice, are of good quality, and of moderate price, and well served, the buffet obviously meets a want and has been everywhere very popular. What has been done in a large number of cases for soldiers would be equally sound and beneficial in the case of men who are turning out war material and doing other heavy work." Mr. Howard Marsh further suggests the physiological importance of working the men in shifts.

THE EMPLOYMENT OF TRAINED NURSES IN MILITARY HOSPITALS.—The War Office has notified that nurses who have certificates of three years' training and are desirous of employment in military hospitals should apply, without delay, to the "Matron-in-Chief, Q.A.I.M.N.S.," War Office, for information as to conditions of service.

RUMOUR *v.* REALITY.—A lecture recently delivered at Lochinver, N.B., by Mr. W. S. Mackenzie calls forcible attention to the need for common sense and restraint in giving credence to the wild rumours that inevitably become current during periods of excitement. Stories had been put in circulation that the deaths at the military camp at Bedford had reached the enormous total of 300 and more during the month of January, largely due to an epidemic of measles. Mr. Mackenzie investigated the matter, and was able to state, from an official list in his possession, giving name, age, regiment, and cause of death, that from the first week of August up to March 6th there had been 78 deaths in all, of which measles, with all its complications, was responsible for 58. Mr. Mackenzie took a practical method of allaying the fears of his highland audience by offering to hand over the list to any responsible man selected by his auditors, and promising to pay £5 for the name of every member of the Highland Division who had died and whose name did not appear on the list.

GLASGOW MEDICAL GRADUATES AND THE WAR.—At the conferring of degrees at Glasgow University on April 1st Principal Sir Donald MacAlister said that he had already received the names of 384 graduates in medicine of the University who were on service with the forces of the Crown, and the list was by no means complete.

INSTRUCTION IN NURSING FOR BELGIAN LADIES.—It is announced that the Joint Anglo-Belgian Committee of the King Albert's Hospitals for Convalescent Belgian Soldiers have determined on the establishment in London, under the supervision of Professor Jacobs, of a training school where Belgian ladies may receive a course of training for nursing.

A DISTINGUISHED RECRUIT TO THE ROYAL ARMY MEDICAL CORPS.—The Earl of Crawford, who has done vigorous service in recruiting since the outbreak of the war, has now capped his patriotic service by himself enlisting as a private in the Royal Army Medical Corps. Lord Crawford, who was formerly a captain in the first volunteer battalion of the Manchester Regiment, as Lord Balcarres represented Chorley in the House of Commons from 1895 to 1913, and was Whip to the Conservative party. He studied social problems as a resident of the Oxford Settlement in the East End of London when the present Bishop of London was head of the institution.

MILITARY HOSPITAL AT ASCOT CLOSED.—As several cases of scarlet fever have broken out at the Military Hospital at Ascot the medical authorities at Aldershot have decided to close the hospital temporarily.

BLENHEIM PALACE AS A HOSPITAL.—The library of Blenheim Palace is being used, by the generosity of the Duke of Marlborough, as a hospital for wounded soldiers.

AT the annual meeting of the North Staffordshire Field Club, held in the new Central School of Science and Technology, Stoke, on March 23rd, Mr. W. Dunnett Spanton, F.R.C.S. Eng. and Edin., was elected president. The meeting marked the jubilee of the club, of which Mr. Spanton is an original member.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the quarterly examination in Practical Pharmacy held on April 9th, the following candidates were approved :—

Herbert Claude Apperly and Ralph William Codrington Ball, Middlesex Hospital; Mahmud Bayumi, Cairo and London Hospital; John Prichard Bracken, University College Hospital; Douglas Crellin, Cambridge University and St. Bartholomew's Hospital; Patrick Arthur Dargan, St. George's Hospital; Frederick Oloff Fehrsen, London Hospital; John Eskdale Fishburn, Portsmouth Municipal College; Arthur Alan Forty, Leeds University and Guy's Hospital; Leslie Stewart Goss, Oxford University and Middlesex Hospital; Bernard Heynes Greensill, Birmingham University; Rupert Bannatyne Hick, St. Mary's Hospital; George Gerald Jack and Vincent Coram James, Middlesex Hospital; David Joseph Heritage Jones, St. Mary's Hospital; James Phillips Jones, Guy's Hospital; Vladimir Kameneff, Moscow and University College Hospital; Nicholas Edward Kendall, Guy's Hospital; Maynard Lambert Loveless, Cambridge University and Middlesex Hospital; William Bird Loveless, Cambridge University and Middlesex Hospital; William George McKenzie, Bristol University; Thomas Walter Melhuish, Cambridge University and Middlesex Hospital; Sadek Girgis Moftah, Cairo and London Hospital; Edgar William Mottau, Ceylon Medical College and University College Hospital; Nava Ratnam Nalliah, Ceylon Medical College and London Hospital; Hallock Ratnarajah, Ceylon Medical College and St. Mary's Hospital; Arthur Lowry Robinson, University College Hospital; Malcolm Catchick Sarkies, Middlesex Hospital; Adolphe Gladstone Millott Severn, Guy's Hospital; Sydney Frank Simpson, King's College Hospital; John Greet Stevens, Guy's Hospital; Arthur Sunderland, Charing Cross Hospital; Godfrey Trehane Symons, King's College Hospital; Thomas Joseph Taunton, St. Bartholomew's Hospital; Robert Ockleston Townend, London Hospital; Arthur Reginald Stuart Warden, Cambridge University and St. Thomas's Hospital; Edward Scott White, Bristol University; and Israel Hyman Zortman, London Hospital.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH, ROYAL COLLEGE OF SURGEONS OF EDINBURGH, AND ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—The quarterly examinations of the above board, held in Edinburgh, were concluded on April 9th with the following results :—

FIRST EXAMINATION.

Janet Adeline Agnes Sang, William Bethune Stott, Rebecca Goodman, Muriel Keyes, Nathaniel Brownlee Watson, and Andrew Francis Briglmen.

Physics.—Max Gottschalk, John Kohler Steel, and Trevor Francis Thomas.

Biology.—Jung Bahadur Singh and Thomas Ferguson Minford.

Chemistry.—Gordon Spivey Woodhead, Alexander Forsyth Cuddell, John Lawson Gibson, Richmond Francis Kerr, and Thomas Ferguson Minford.

SECOND EXAMINATION.

Andrew Inglis Meek (with distinction), John Bruce Watson Telford, Mohammed Talaat, Patrick Joseph Murnane, Janie Isabel McBirnie, Agnes Emilie Keen, and Alan Herbert Brooke Hudson.

Anatomy.—Leslie MacDuff, Eduard Louis Adendorff, and Ernest Ebenezer Bronstorph.

Physiology.—Daniel Cornelius Howard, Hassan Amin Madwar, and Richard Gordon Bell.

THIRD EXAMINATION.

Zachariah Albert Green (with distinction), John Alexander Murray, John Alexander Tolmie, John Forbes Campbell, Frederick Charles Joseph Mitchell, Iwan Davies, Ernest Andrew Hamilton, Martha Hunter Hoshing, Phœbe Tripp, Frank Jones, and Paul Vertannes.

Pathology.—Indranarayan Borrah, William McElroy, and Stanley Wall Hoyland.

FINAL EXAMINATION.

Arthur Craig, William Leckie Coullis, Victor James Wilson, Bak Hin Ong, and Alamu Ojo Olaribigbe.

Surgery.—Charles Evelyn Meryon, John Murray Hiddleston, and Joseph Sydney Dickson.

Midwifery.—Nathaniel Benjamin Morris, Charles Evelyn Meryon, and John Murray Hiddleston.

Medical Jurisprudence.—Matthew McLintock Bainbridge, John Park Mathie, William Ainsley, Alexander Cray McKee, Douglas Charles Murray Page, Alexander William McGregor, William Alfred Backenstoe, Paul Lucien Manuel, Robert Christian Wilson Spence, William James Forsyth Craig, and Edward Spence.

UNIVERSITY OF GLASGOW.—The degrees of M.B. and Ch.B. were conferred on April 1st on the following :—

With commendation: Ronald Thomson Grant and Seymour Cochrane Shanks. Ordinary degrees: Ismail Abdurahman, George Kirkwood Allan, James Mair Anderson, William Ernest Boyd, M.A., Samuel Bryson, John Buchanan, John Munro Campbell, Alfred Mackenzie Clark, George Gibson Cooper, Henry Paterson Crow, Alexander Hogg Donaldson, Harry Taylor Findlay, George Fleming, George John Fraser, Ian Maclean Frazer, David Gould Gardiner, William Gordon, Thomas Cameron Houston, William Hunter Howat, Robert Kyle, Hugh Brown Lawrie, Alfred Thomas Logan, Donald Kerr MacDougall, Donald M'Donald M'Intyre, James Murdoch Mackay, Joseph Allan MacLean, Thomas Duff Miller, Janey Lamond Munro, Prem Nath, L.D.S., Thomas Augustine O'Brien, John Roberts Pate, James Paterson, William Burns Primrose, Alexander Forbes Ross, William Jack Scade, William Ballantine Stewart, Robert Sutherland Strachan, Robert Taylor, Cecil Raymond Tytler Thompson, Margaret Walker, William James Cunningham Watt, James Gordon Wilson, and Thomas Young.

University of Durham, Faculty of Medicine.—At the Convocation on March 27th the following degrees were conferred :—

Doctor of Medicine.—Reginald Cyril Herbert Francis.
Doctor of Medicine for Practitioners of 15 Years' Standing.—Matthew Leslie Guy Hallwright and Arthur King, M.R.C.S.
Master of Surgery.—John Hamilton Barclay.
Bachelor of Medicine.—Patrick Alexander Clements, Geoffrey Bede Egerton, Mary Sarah Gordon, William Herbertson, Charles Henry Keay, Herbert Arnold Lake, George Edward Stephenson, William Stott, and Edgar James Tyrrell.
Bachelor of Surgery—Patrick Alexander Clements, Geoffrey Bede Egerton, Mary Sarah Gordon, William Herbertson, Charles Henry Keay, George Edward Stephenson, William Stott, and Edgar James Tyrrell.
Diploma in Public Health.—Margaret Mair Miller.
Licence in Dental Surgery.—George Galloway Robertson.

In examinations for the Licence in Dental Surgery the following candidates have passed :—

Second Examination, Dental Mechanics and Dental Metallurgy.—Gainsford Reed and Wilfred Phillipson Spence.
Third Examination, Anatomy, Physiology and Histology ; Dental Anatomy and Dental Histology and Dental Materia Medica.—Douglas Edward Sayce and Lawrence Somerville-Woodiwis.
Final Examination, Surgery, Dental Surgery, Dental Pathology and Bacteriology and Operative Dental Surgery.—George Galloway Robertson.

London School of Tropical Medicine.—The following were the successful candidates at the examination held at the end of the forty-seventh session (January–April, 1915) :—

G. Campbell* (with distinction), W. L. Peacock (Colonial Service), R. Bruce-Low (Colonial Service), E. Banos, W. J. J. Arnold (Colonial Service), and P. T. Patel.

* This candidate has been awarded the Duncan medal of the London School of Tropical Medicine, this being given to the student who obtains the highest aggregate of marks during the session.

University of Liverpool.—The Diploma in Tropical Medicine has been obtained by the following gentlemen: J. F. Lobo, L.M.S., G. D. Madhok, L.R.C.P. & S., L.F.P.S., and K. V. Swami, L.R.C.P. & S., L.F.P.S.

Donations and Bequests.—By will the late Miss E. M. Green, of Brighton, left £1000 to the Brompton Hospital for Consumption, and £500 each to the Brighton, Hove, and Preston Dispensary, and the Brighton, Hove, and Sussex Throat and Ear Hospital. The residue of her property the testatrix left equally between the Cancer Hospital, Fulham ; the Royal Hospital for Incurables, Putney ; and the British Home for Incurables, Streatham.—Mr. Thomas Critchley, of Blackburn, has given £1000 to the East Lancashire Royal Infirmary to endow a bed to be named after himself and his wife.—Under the will of the late Mr. Joseph Kitchingman, of Nook, Liscard, the testator left £2000 for the maintenance of two beds in the Victoria Central Hospital, Liscard ; and £1000 to the Warrington Infirmary.

Centenarians.—The death is announced of Mrs. Elizabeth Deacon, of Croydon, in her 103rd year. She retained all her faculties, and only quite recently wore spectacles.—Mr. Henry Preston, of York, has just celebrated his 100th birthday.

The annual meeting of the Medical Missions Department of the Society for the Propagation of the Gospel in Foreign Parts is to be held in the Great Hall of the Church House at 8 P.M. on Wednesday, April 21st. The chair will be taken by Sir Francis H. Champneys, Bart., M.D., and the speakers will be Mrs. Ferguson-Davie, M.D. of Singapore, and Dr. H. H. Weir, of Corea.

Mr. F. M. Fisk, who has been manager of the London Branch of the firm of Parke, Davis and Co. since it was established in 1891, died on Saturday last. Mr. Harry Fisk, who has for some years occupied the post of assistant manager, has been appointed manager of the branch.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Aitchison, A., M.B., C.M. Glasg., has been appointed Assistant Medical Officer at the Winsley Sanatorium, near Bath.
Donelan, J. O'C., L.R.C.P. & S. Irel., has been appointed Consulting Visitor in Lunacy for Dublin.
Fenton, D., M.B., Ch.B. Edin., D.P.H. Vict., has been appointed Medical Officer and Public Vaccinator for the Mellor District of the Blackburn Union.
Hall, W. T., M.B., C.M. Edin., has been appointed Medical Officer for the No. 9 District of the Newcastle Board of Guardians.
Howell, Howell Tylford, L.R.C.P. Lond., M.R.C.S., has been appointed Senior Resident Medical Officer at the Winsley Sanatorium, near Bath.
Kirkman, A. H. B., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Staplehurst District of the county of Kent.
Langran, William, L.R.C.P. & S., L.M. Edin., L.A.H. Dub , has been appointed Medical Officer of Health to the Axminster (Devon) Urban District Council.
O'Carroll, Joseph F., M.D., M.Ch. R.U.I., F.R.C.P. Irel., has been appointed a Medical Visitor in Lunacy.
Patton, A., M.B., B.S. R.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Saintfield District of the county of Down.
Smyth, T. A., M.B., Ch.B. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Enniskillen District of the county of Fermanagh.
Wheeler, Dora E., M.B., Ch.B. Edin., has been appointed Anæsthetist to the Eye and Ear Infirmary, Liverpool.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).
When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

Barrow-in-Furness, North Lonsdale Hospital.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.
Bath, Royal United Hospital.—Resident Medical Officer.
Belgrave Hospital for Children, Clapham-road, S.W.—Resident Medical Officer for six months. Salary at rate of £100 per annum, with board, residence, and washing.
Benenden, Kent, National Sanatorium.—Locum Tenens Medical Superintendent. Salary 5 guineas weekly, with board and laundry. Also Assistant Medical Officer. Salary £120 per annum, with board and laundry.
Bethlem Royal Hospital, London, S.E.—Temporary Assistant Medical Officer. Salary £300 per annum, with board, apartments, and laundry.
Bethnal Green Infirmary, Cambridge-road, N.E.—Assistant Medical Officer. Salary at rate of £280 per annum, with apartments, board, and washing.
Birkenhead Borough Hospital.—Female Senior and Junior House Surgeons. Salary £180 and £150 per annum respectively, with board and laundry.
Birmingham General Dispensary.—Resident Medical Officer, unmarried. Salary £250 per annum, with apartments, attendance, &c.
Birmingham and Midland Ear and Throat Hospital, Edmund-street.—House Surgeon for six months Salary at rate of £100 per annum, with board, lodging, and washing.
Bootle Borough Hospital.—Senior and Junior House Surgeons. Salary £150 and £130 per annum respectively, with residence, board, and laundry.
Bournemouth, Royal Victoria and West Hants Hospital.—Honorary Assistant Physician. Also House Surgeon for six months. Salary £100 per annum, with board, lodging, washing, &c.
Bradford Poor-law Union, for St. Luke's Hospital and Union House.—Assistant Resident Medical Officer, unmarried. Salary £250 per annum, with rations, apartments, and washing.
Bridgwater Hospital.—House Surgeon, unmarried. Salary at rate of £125 per annum, with board, lodging, and washing.
Bristol General Hospital.—Second House Physician, House Surgeon, Casualty House Surgeon, and Resident Obstetric Officer, all for six months. Salary at rate of £150 per annum, with board, residence, &c.
Bristol Royal Infirmary.—Three House Surgeons. Two House Physicians, and One Obstetric and Ophthalmic House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.
Bristol University.—Demonstrator in Anatomy. Salary £180 per annum.
Burnley Union.—Resident Assistant Medical Officer. Salary £200 per annum, with apartments, rations, washing, and attendance.
Bury Infirmary.—Senior House Surgeon and Junior House Surgeon. Salary £175 and £150 per annum respectively, with board, residence, and washing.
Bury St. Edmunds, West Suffolk General Hospital.—Resident Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and laundry.
Buxton, Derbyshire, Devonshire Hospital.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.
Camberwell, Parish of.—Temporary Assistant Medical Officer for Infirmary, Brunswick-square, Camberwell, Gordon-road Institution, Peckham, and Scattered Homes. Salary at rate of £500 per annum, with apartments, board, and washing.

CANTERBURY MENTAL HOSPITAL.—Assistant Medical Officer unmarried. Salary £250 per annum, with board, lodging, washing, and attendance.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £200 per annum, with apartments (not board).

CARMARTHEN, JOINT COUNTIES ASYLUM.—Temporary Second Assistant Medical Officer. Salary at rate of £200 per annum, with board, lodging, washing, &c.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Tuberculosis Officer. Salary at rate of £400 per annum, with lunch and dinner. Also House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing.

COLCHESTER, ESSEX COUNTY HOSPITAL.—Resident Medical Officer. Salary £160 per annum, with board, washing, and residence.

DERBY COUNTY BOROUGH.—Temporary Tuberculosis Officer, unmarried. Salary £400 per annum, with board and residence.

DERBY, DERBYSHIRE HOSPITAL FOR SICK CHILDREN.—Female Resident Medical Officer for six months. Salary £200 per annum.

DURHAM COUNTY COUNCIL.—Assistant School Medical Officer. Salary £300 per annum.

EDMONTON MILITARY HOSPITAL.—Assistant Surgeons. Also Medical Man as Radiographer. Pay at army rates.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—House Physician for six months and House Surgeon for four months. Salary at rate of £75 per annum each, with board, residence, and washing.

GLAMORGAN COUNTY COUNCIL.—Medical Officer. Salary at rate of £300 per annum.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—House Physician for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

HALIFAX COUNTY BOROUGH.—Temporary Assistant Medical Officer of Health. Salary at rate of £300 per annum.

HALIFAX ROYAL INFIRMARY.—Second and Third House Surgeons, unmarried. Salary £120 and £100 per annum respectively, with residence, board, and washing.

HARROGATE INFIRMARY.—Resident House Surgeon. Salary £100 per annum.

HOSPITAL FOR WOMEN, Soho-square, W.—Resident Medical Officer for six months. Salary at rate of £80 per annum.

HULL ROYAL INFIRMARY.—House Physician, unmarried. Salary £105 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging. Also Casualty House Surgeon for six months. Salary at rate of £80, with board and lodging.

HULL, VICTORIA CHILDREN'S HOSPITAL, Park-street.—Resident House Surgeon. Salary £100 per annum, with board and laundry.

INVERNESS, NORTHERN INFIRMARY.—House Surgeon. Salary £150 per annum, with board, &c.

LANCASTER COUNTY ASYLUM.—Temporary Assistant Medical Officer Salary 6 guineas per week, with board, &c.

LIVERPOOL, BROWLOW HILL INSTITUTION.—Resident Assistant Medical Officer. Salary at rate of £300 per annum, with rations, &c.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—House Physician and House Surgeon for six months. Salary at rate of £100 per annum each, with board, residence, and laundry.

LIVERPOOL, WEST DERBY UNION, WALTON INSTITUTION, Rice-lane, Walton.—Temporary Assistant Resident Medical Officer, unmarried. Salary at rate of £300 per annum, with board, &c.

LONDON LOCK HOSPITAL, Harrow-road, W.—House Surgeon for six months. Salary at rate of £130 per annum, with rooms, board, and washing.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Medical Registrar. Salary at rate of 40 guineas per annum.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—Registrar to assist at Out-patient Clinics.

MANCHESTER, COUNTY ASYLUM, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician and House Surgeon. Salary at rate of £60 per annum. Also Assistant House Physician and Two Assistant House Surgeons. All for six months. Salary at rate of £40 per annum, all with board and washing.

MIDDLESBROUGH, NORTH ORMESBY HOSPITAL.—House Surgeon. Salary £150 per annum, with board, washing, and attendance.

NEWCASTLE-UPON-TYNE, ROYAL VICTORIA INFIRMARY.—Four House Physicians, Four House Surgeons, Accident-room House Surgeon, House Surgeon to Aural and Ophthalmic Department, House Surgeon to Skin and Gynæcological Department, and House Surgeon to Out-patient Dressing Department.

NEW HOSPITAL FOR WOMEN, Euston-road, N.W.—Female House Surgeon and House Physician. Also Resident Medical Officer at House of Recovery, New Barnet. Salary with this post £60 per annum.

NEWPORT MENTAL HOSPITAL, Caerleon, Mon.—Temporary Assistant Medical Officer. Salary 5 guineas per week, with board, rooms, and attendance.

NORFOLK EDUCATION COMMITTEE.—Temporary Assistant Medical Officer. Salary £300 per annum.

NORTHAMPTON GENERAL HOSPITAL.—House Surgeon. Salary £120 per annum, with apartments, board, washing, attendance, &c.

NORWICH, JENNY LIND HOSPITAL FOR SICK CHILDREN.—Female Resident Medical Officer for six months. Salary £150 per annum, with board, apartments, and laundry.

OLDHAM COUNTY BOROUGH.—Assistant Schools Medical Officer. Salary £300 per annum.

PADDINGTON GREEN CHILDREN'S HOSPITAL.—Female House Physician for six months. Salary at rate of £80 per annum, with board, residence, and washing.

PORTPATRICK, PARISH OF.—Medical Officer and Public Vaccinator. Salary £60 per annum, and vaccination fees.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Physician and House Surgeon for six months. Salary £100 per annum, with board, residence, and washing.

ROTHERHAM HOSPITAL AND DISPENSARY.—Senior House Surgeon. Salary £200 per annum, with board, lodging, and washing.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Senior Resident Medical Officer. Salary £200 per annum, with board, residence, and washing. Also Assistant Anæsthetist (part-time). Salary £50. Also Female Senior and Junior Obstetric Assistants. Salary £75 and £50 per annum respectively. Each with board, residence, &c. Also Female Junior Anæsthetist (two days weekly) and Two Female Resident Medical Officers. With board, residence, &c.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Out-patient Surgical Officer for six months. Salary at rate of £50 per annum.

SALISBURY GENERAL INFIRMARY.—House Surgeon and Assistant House Surgeon, unmarried. Salary £100 and £75 per annum, respectively, with apartments, board, lodging, and washing.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House Surgeons. Salary £100 and £80 per annum respectively, with board, residence, &c.

SHEFFIELD, ECCLESALL BIERLOW UNION.—Resident Assistant Medical Officer. Salary £250 per annum, with board, washing, and apartments.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Surgeon and Assistant House Physician.

SHEFFIELD ROYAL INFIRMARY.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.

SHREWSBURY, ROYAL SALOP INFIRMARY.—House Physician. Salary at rate of £110 per annum, with board and apartments.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Senior House Surgeon. Salary £150 per annum, with residence, board, and washing.

STAFFORD COUNTY MENTAL HOSPITAL.—Female Temporary Assistant Medical Officer. Salary £250 per annum, with board, apartments, and laundry.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—Resident Surgical Officer, unmarried. Salary £300 per annum. Also Two House Surgeons and One House Physician, unmarried. Salary in each case £150 per annum, all with board, residence, and laundry.

SWINDON BOROUGH EDUCATION DEPARTMENT.—School Medical Officer. Salary £300 per annum.

TAUNTON AND SOMERSET HOSPITAL, Taunton.—Senior House Surgeon.

VENTNOR, ISLE OF WIGHT, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST ON THE SEPARATE PRINCIPLE.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with board, lodging, &c.

WAKEFIELD, CLAYTON HOSPITAL.—Female Junior House Surgeon. Salary £120 per annum, all found.

WARRINGTON, LORD DERBY WAR HOSPITAL.—Resident Physician and Surgeon.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.

WESTERN OPHTHALMIC HOSPITAL, Marylebone-road, W.—House Surgeon. Salary £100 per annum.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—House Physicians. Salary £120 and £100 per annum, with board, residence, and washing.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—House Surgeon. Salary £150 per annum, with board, lodging, and attendance.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Board, lodging, and attendance provided.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Abergele, in the county of Denbigh; and at Ashton-in-Makerfield, in the county of Lancaster.

Births, Marriages, and Deaths.

BIRTHS.

BURNEY.—On April 4th, at Lancaster-place, South Hampstead, London, the wife of Captain W. H. Skardon Burney, R.A.M.C., Indian Expeditionary Force, of a daughter.

DISMORR.—On April 4th, at Milton House, Gravesend, the wife of Cecil James Stewart Dismorr, M.R.C.S., L.R.C.P., of a son.

LITTLE.—On April 9th, at Wimpole-street, W., the wife of Ernest G. G. Little, M.D., F.R.C.P. Lond., of a son.

MARRIAGES.

HARDWICKE—DUFF.—On April 7th, at the Church of St. Anselm's, Mayfair, W., Edwin Cecil, Lieutenant, R.A.M.C., to Joan Ross, second daughter of the late Hugh Alexander Duff, of Kereru, New Zealand, and Edderton, Ross-shire.

HEWLETT—COLLINS.—On April 10th, at St. Swithin's Church, East Grinstead, by the Rev. Percy Collins, M.A., Richard Tanner Hewlett, M.D., F.R.C.P., Professor of Bacteriology in the University of London, to Gertrude Lilian Floyd, daughter of Dr. and Mrs. C. E. Collins, of "Redstede," East Grinstead.

DEATHS.

ADAMS.—On April 9th, at Friarsfield, Lanark, Surgeon-Lieutenant-Colonel Alexander Maxwell Adams, F.R.C.S. Edin., 3rd Scottish Rifles, aged 78 years.

EDWARDS.—On April 11th, at Springfield House, Queen-street, Cardiff, William Thomas Edwards, M.D., F.R.C.S., LL.D., J.P., aged 93 years.

GRANT.—Missing from s.s. *Falaba*, torpedoed on March 28th in the Bristol Channel, Dr. Alexander William Harvey Grant, West African Medical Staff, aged 42 years.

HARRISON.—On April 12th, at Bankfield, Haslingden, the residence of his mother, William Sandilands Harrison, Lieutenant-Colonel, Royal Army Medical Corps, age 43 years. Interment Thursday, April 15th, at 12 noon, Haslingden Parish Church. Will friends kindly accept this—the only intimation.

MAGRUDER.—On April 8th, at Belgrade, Serbia, from typhus fever, Dr. Ernest Pendleton Magruder, A.M., M.D., F.A.C.S., of Washington, D.C., Director, American Red Cross Unit 3, aged 43 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE TRAINING OF INDIAN MIDWIVES.

A SCHEME devised by Lady Willingdon has been recently put forward at Bombay. It is proposed to create an interest in the work done by the Bombay Sanitary Association towards reducing the infant mortality and the dangers to mothers, due to the ignorance and superstition of the native midwife and the women who employ her. It is quite apart from training nurses for India or training Indian women as nurses. In India there is a class which cannot be reached by providing trained nurses unless they are taught to appreciate them and can afford to employ them. The aim is to put the native *dai*, or midwife, under trained supervision. It will be impossible to supersede these women at once, but a good deal can be done, by bringing them under control and by legislating on the lines of the Midwives Act, England, 1902, gradually to replace them. The position of these native *dais* must, however, be taken into consideration. In some cases they are hereditary holders of the title. They cannot take the place of the trained nurse, but they might with advantage be got into touch with health visitors until the demand is created for a better trained class of nurse, resulting in a reduction in the infant mortality and risk to the mother. In Bombay there are ten municipal district nurses and five health visitors, who attend poor women in confinement and give instruction in personal and domestic hygiene; they are empowered to give aid in the shape of a bed, blanket, milk, &c., and disinfectants to women who are certified by a magistrate to be in a deserving condition. There are ten municipal dispensaries, and at each of them these native women have been collected and a course of demonstrations and instructions given to them in their own language. It is now sought to provide ten more trained women, and shortly to have a maternity home where poor women may go for confinement and where native *dais* will be trained. The idea is to get to know these women and their methods and induce them to call in skilled aid and ask for the help of a municipal trained nurse free of charge, and to notify all births and deaths to the Health Department, and all cases of sickness among women.

It must be understood that this movement is an educative one directed, first, at removing some of the risks by controlling the *dais*; and secondly, by providing more lady health visitors to induce mothers to ask for more skilled attendance by visiting the homes and explaining the advantages.

INSTRUCTION IN PRACTICAL BEE-KEEPING.

To the Editor of THE LANCET.

SIR,—I have received a letter from the British Bee-Keepers' Association informing me that courses of instruction and demonstrations in practical bee-keeping will be given throughout the spring and summer months at the Educational and Experimental Apiary of the British Bee-keepers' Association in the Zoological Gardens, Regent's Park, and that full particulars can be obtained from Mr. W. Herrod-Hempsall, the secretary, 23, Bedford-street, Strand, W.C. The association makes no profit whatever on these lectures and demonstrations; in fact, it was only by the financial assistance received from the Development Commissioners that the apiary was established in the Zoological Gardens. I would remind your readers that the bee-keeping industry enables an additional and very substantial profit to be obtained from the land, and that the production of fruit almost entirely depends upon the visits of honey bees for the fertilisation of fruit blossoms.

I am, Sir, yours faithfully,
April 12th, 1915. J. BERNARD LAMB.

THE ARMCHAIR EXPERT.

IN the current issue of the *Craigleith Hospital Chronicle*, "our own military expert, a gentleman as intimately in touch with the Headquarters' Staff as any other expert who fills an armchair," contributes some Notes on the Military Situation which an imaginary Censor believes to be "as instructive as any similar notes I have ever had the pleasure of censoring. Please send me some more of the same." The notes, from which we extract the following, are excellent nonsense:—

A correspondent asks me the pertinent question: "Since the Kaiser has given 85 whole holidays and held 69 commemoration services to celebrate the total annihilation of his enemies, how is it that the war still continues?" The point raised is interesting, and the answer undoubtedly must be that the holidays were given first and the annihilations arranged afterwards. The weather then presumably intervened, and so the latter part of the programme had to be postponed. [*Note by Censor*—"Passed, but how did you learn all this?"] Another correspondent inquires why copper is so important for our enemies, since he always understood that iron was the metal employed in the manufacture of armaments. The answer to this unquestionably is that the iron is at present required to make crosses, and as the value of each of these is about a copper that metal is naturally in considerable demand. [*Note of Censor*—"Passed, but please stop now."]

The notes bear the signature of Mr. J. Storer Clouston, who has to his credit, in "The Lunatic at Large," one of the drollest works of recent times.

LEAVING THE COFFIN IN THE PORCH.

To the Editor of THE LANCET.

SIR,—Will you allow me to suggest a "funeral reform"? Invariably, under all circumstances, the coffin should be placed in the porch and never taken *inside* the church, whether the deceased has died from infectious illness or not. The coffin should be in the care of the undertaker in the porch until the mourners come out of church after the first part of the funeral service. One can hardly imagine how such a senseless custom as the present one could have ever come into vogue. But whatever be its origin, it is most unwise from a sanitary point of view under any circumstances or at any time of the year. The precaution is especially necessary now that spotted fever has appeared in several places.

I am, Sir, yours faithfully,
April 10th, 1915. ÆSCULAPIUS.

MISSED ABORTION.

A MEDICAL correspondent, signing himself "Carnis," sends us the following upon which he invites comments: An exceptionally strong and healthy married woman, 26 years old, with one child 4 years of age, had her last regular menstruation at the end of January. At the end of the following May a red and brown discharge set in per vaginam, occurring on alternate days and lasting for six weeks, when it ceased, amenorrhœa following. At the end of March in the succeeding year she felt abdominal pains, accompanied by a watery discharge per vaginam, which lasted for three days, when a carneous mole, measuring 4 inches in length and 3½ inches in circumference, was expelled. On cutting open the mole no trace of a fœtus or cord could be seen, but a number of nodules of various sizes projected from the anterior wall of the cavity. The lining and surface of the mole were smooth. Very little hæmorrhage accompanied the expulsion.

A GOOD DINNER FOR THREEPENCE.

THE Central Committee on Women's Employment is doing sensible work in demonstrating through its training kitchens that the price of good living is a matter of sound domestic economy and competent culinary art. Where many people are to be fed, the cost of a good dinner is being reduced as low as 3*d.* a head. This dinner consists of either boiled fish, with parsley sauce, potatoes, and baked syrup rolypoly pudding; or roast mutton, greens and potatoes, with stewed apples and custard. Upwards of 1500 dinners are being supplied weekly from six centres to the women who work in the Queen's Work for Women Fund Workrooms. In many households nearly as much food is wasted as is eaten. But, apart from wilful waste, the waste arising from uneconomic methods and abominable cookery is as detrimental if less criminal.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 14th, 1915.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
April 8	29·454	W.	0·03	101	56	41	43	46	Cloudy
,, 9	29·870	N.W.	0·10	99	54	41	41	45	Cloudy
,, 10	30·016	N.	...	99	54	40	41	44	Cloudy
,, 11	30·240	W.	...	75	56	44	46	48	Overcast
,, 12	30·280	S.W.	0·25	56	49	44	43	47	Overcast
,, 13	30·090	N.	...	57	47	42	41	43	Cloudy
,, 14	30·104	N.	...	97	54	37	37	39	Fine

The following magazines, journals, &c., have been received:— Maryland Medical Journal, Modern Hospital, Surgery, Gynecology, and Obstetrics, Journal of Anatomy and Physiology, Science Progress, Journal of Comparative Pathology and Therapeutics, Annales de l'Institut Pasteur, American Journal of Medical Sciences, Archives of the Roentgen Ray, &c.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Lord Rayleigh, O.M.: Deep Water Waves, Progressive or Stationary, to the Third Order of Approximation.—Hon. R. J. Strutt: A Chemically Active Modification of Nitrogen, produced by the Electric Discharge. VI.—Dr. C. Chree: The Difference between the Magnetic Diurnal Variations on Ordinary and Quiet Days at Kew Observatory.—Mr. F. Horton: The Effects of Different Gases on the Electron Emission from Glowing Solids (communicated by Sir J. J. Thomson).—Mr. W. S. Tucker: Heats of Dilution of Concentrated Solutions (communicated by Prof. H. L. Callendar).—Mr. T. R. Merton: On the Origin of the "4686" Series (communicated by Prof. A. Fowler).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY.

SECTION OF THERAPEUTICS AND PHARMACOLOGY (Hon. Secretaries—W. Langdon Brown, Philip Hamill, J. Gordon Sharp): at 4.30 P.M.

Annual General Meeting.—Election of Officers and Council for Session 1915-1916.

Discussion :

On the Treatment of Phthisis by the Induction of Pneumothorax, to be opened by Dr. T. D. Lister, who will give a demonstration of the apparatus.

Dr. Jane Walker, Dr. S. Vere Pearson, Dr. Lillingston, Dr. de Carle Woodcock will take part in the discussion.

GENERAL MEETING OF FELLOWS: at 5 P.M.

Ballot for the Election of Candidates to the Fellowship.

FRIDAY.

SECTION OF EPIDEMIOLOGY AND STATE MEDICINE (Hon. Secretaries—G. S. Buchanan, William Butler): at 8.30 P.M.

Annual General Meeting.—Election of Officers and Council for Session 1915-1916.

Dr. H. E. Corbin: Small-pox among Cotton Operatives.

Dr. E. L. Collis: The Occurrence of an Unusual Cough among Weavers of Cotton Cloth.

(Members desiring advance proofs should communicate with Dr. G. S. Buchanan, Local Government Board, Whitehall, S.W.)

RÖNTGEN SOCIETY, Institution of Electrical Engineers, Victoria Embankment, W.C.

TUESDAY.—8.15 P.M., General Meeting. Papers:—Dr. N. S. Finzi: Late Radium and X Ray Burns.—Mr. F. H. Glew: A New Alpha Ray Effect.—Mr. A. O. Forder will exhibit a New Plate Holder.

MEDICO-LEGAL SOCIETY, 11, Chandos-street, Cavendish-square, W.

TUESDAY.—8.30 P.M., Exhibition of Specimens. Mr. J. H. C. Sproule: Medico-Legal Experiences in Ceylon.—Dr. R. Burrows: The British Medical Association Report on Crime and Punishment.

SOCIETY FOR THE PROPAGATION OF THE GOSPEL IN FOREIGN PARTS (MEDICAL MISSIONS DEPARTMENT), Great Hall of the Church House.

WEDNESDAY.—8 P.M., Annual Meeting. Speakers:—Mrs. Ferguson-Davie, M.D. (Singapore) and Dr. H. H. Weir (Corea).

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

THURSDAY.—8.30 P.M., Discussion on Epidemic Cerebro-spinal Meningitis (opened by Dr. F. E. Batten). Followed by Dr. D. N. Nabarro, Dr. J. A. Arkwright, and Dr. L. Colebrook.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

Museum Demonstrations for Advanced Students and Medical Practitioners:—

MONDAY.—Mr. Shattock: Specimens of Spina Bifida.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

TUESDAY.—3 P.M., Mr. B. Fletcher: The War on Rheims. (Lecture II.)

THURSDAY.—3 P.M., Prof. A. S. Eddington: The System of the Stars: The Stellar System in Motion. (Lecture II.)

FRIDAY.—9 P.M., Major P. S. Lelean, R.A.M.C.: Military Hygiene at the War.

SATURDAY.—3 P.M., Lieutenant-Colonel A. G. Hadcock: Modern Artillery. (Lecture II.)

For further particulars of the above Lectures, &c., see Advertisement Pages.

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It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

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An Address

ON

WOUND INFECTIONS

AND ON

SOME NEW METHODS FOR THE STUDY OF THE VARIOUS FACTORS WHICH COME INTO CONSIDERATION IN THEIR TREATMENT.

Delivered before the Royal Society of Medicine on March 30th,

By COLONEL SIR A. E. WRIGHT, M.D., F.R.S.,

A CONSULTING PHYSICIAN TO THE EXPEDITIONARY FORCE.

(*From the Research Laboratory attached to No. 13 General Hospital, Boulogne-sur-Mer.*)

(*Continued from p. 792.*)

We may, with such new knowledge as we have won from the experimental methods I have described, now revert to the consideration of those three methods of combating wound infections which were enumerated earlier in this discourse. It will be remembered that these were: *treatment by antiseptics; treatment by physiological methods;* and *vaccine-therapy*. We will take them one by one.

TREATMENT BY ANTISEPTICS.

If we were to adopt the Socratic method, and were to inquire of the first man whom we might find engaged in washing out a wound what were the grounds for his confidence in the utility of his procedure, he would probably make some such answer as the following: "I know that the antiseptics which I am bringing into application are agents which directly kill and inhibit the growth of microbes. There is no other agency known which would be competent to do the bactericidal work that these antiseptics do in the wound. And, again, it is everybody's knowledge that Lister, by bringing in his antiseptic treatment, extirpated those septic infections of wounds, which before the advent of his method devastated the surgical wards of every hospital."

And if we were to push our question further, and to ask of the surgeon what was the particular end and object to which his procedures were directed—whether it was the sterilisation of the wound; or the killing off of a large proportion of the microbes; or the imposition of a check upon the survivors; and if we were further to ask, whether the particular antiseptic in the particular strength in which he was employing it could be relied upon to achieve the end in view; we should probably be told that, supposing that the antiseptic did not completely sterilise the wound, it would inevitably kill a large number of microbes; and it would probably also inhibit the growth of any survivors. And, inasmuch as one or other of these objects would be sure to be achieved, there could be no question but that advantage would be accruing to the patient.

We should, in short, get an answer which proceeded upon at least one erroneous premiss, and which betrayed loose and inconsequent thinking, and a reluctance to come to close quarters with the question. But the reasonings of the larger part of humanity are neither better nor worse than this, and it is not for that less necessary to take them into very serious account, and to do our best to correct them when they mislead.

Let us begin, since Lister is the fount and origin of all antiseptic treatment, with what relates to his work. Lister's name is associated with two discoveries. The *first* of these is the discovery that we can, by an *anticipative prophylactic application*, hold off microbes from surgical wounds, and so avoid wound infections. The *second* is that in cases of compound fracture where the wound is already infected we can still, by what I may perhaps call a *retrospective prophylactic application of antiseptics*, stave off the wound infection. The first of these is a discovery of absolutely universal application, and it will carry the name of Lister down to remotest posterity. The second discovery has reference only to a particular kind of traumatic wound, and shows that prophylactic applications of antiseptics can be usefully employed also in connexion with some wounds which are already infected.

It is clear that neither of these discoveries finds any direct application either in connexion with prophylaxis or the treatment of the wound infections which occur in projectile wounds.

What it is necessary to say on the possibility of preventing septic infection by sterilising projectile wounds can be said in a very few words. The principle that microbes can be held off from wounds by an antecedent employment of antiseptics has no application to projectile wounds, for these are infected before they are seen by the surgeon. Nor, again, is the Listerian discovery that prophylactic applications of antiseptics can in the ordinary compound fractures of civil life stave off wound infection, a discovery which relates to conditions such as obtain in projectile wounds. Retrospective, or as we may also call them *ex post facto*, prophylactic applications of antiseptics will give good results only when the microbes are accessible. In the case of the ordinary compound fracture of civil life this is the case. For here the microbes lie exposed on the external surface of the bone which has been thrust through the skin. The contrary holds for projectile wounds. Here the microbes are inaccessible. They have been carried down deep into the tissues, and lie on the inner face of a torn and ragged track, and that track is blocked by blood clot and hernia of muscle.

It is clear that the utmost that prophylactic applications of an antiseptic could under such conditions achieve would be an incomplete sterilisation. And an incomplete sterilisation would leave us with a wound infection, and in a few days with as bad an infection as before. Coming now to actually subsisting wound infections, we see that exactly the same thing would apply. We are not entitled to infer from the fact that the method of Lister is within its limitations an effective method of prophylaxis, that it is also an effective method of treatment. That is clearly a question which must be determined as an independent issue.

When we approach the question in this way we see that the first point which has to be determined is: What particular concentration of each particular antiseptic will, when applied to the wound, exert there a bactericidal action on the microbes? In connexion with this we must beware of the fallacy of taking the figures for an antiseptic acting on microbes in watery suspension and seeing in these an all-round formula of efficacy for that particular antiseptic.

A formula of efficacy of this sort might, of course, find a useful application where the sterilisation of skin surfaces and instruments was concerned. For here the antiseptic comes into operation on exposed microbes in full strength. In practically every other case the conditions would be entirely different. The antiseptic would have to come into operation in a medium which quenches its antibacterial action.

I have recently, in dealing with internal medication by antiseptics in pneumonia, brought forward[1] an array of experiments which show that the quenching of the antibacterial power of antiseptics by the medium in which these come into application, is the essentially important factor to be considered in connexion with their therapeutic use. In particular I have shown in connexion with drugs like creosote and guaiacol that doses which would almost certainly be lethal would have to be administered before these could come into operation in blood.

The same sort of thing holds true of pus. But here the situation will be different in two respects. It will be different in respect that, as compared with serum, pus exerts a greater quenching effect upon antiseptics. It is, if I may put it so, more *antisepticotropic*. This will prevent us taking the antisepticotropic values for the serum and applying them to the pus in the wound. Again, the conditions under which an antiseptic will come into application in a wound will contrast with those which come into application in internal medication. In connexion with internal medication we have to take into consideration the quenching influence which would be exerted by the totality of blood. In applying antiseptics to the wound it lies with us to make the conditions much more favourable to the antiseptic. We can, if it is a question of washing out a wound with antiseptics, make the relation of antiseptics to pus anything that we please. And where it is a question of leaving an antiseptic behind in the wound for the purpose of inhibiting growth, we can also, within limits, lay down our own conditions, and make provisions which will prevent the conditions becoming too unfavourable to the antiseptic.

If there are, in the published literature on antiseptics, any papers dealing with the investigation of the efficacy of antiseptics from this point of view, they have escaped my observation; I have, accordingly, in conjunction with my fellow-workers, Dr. W. Parry-Morgan and Dr. A. Fleming, set to work to supply the missing data. To find out what concentrations of antiseptic ought to be brought into operation in washing out a wound, we took 9 volumes of antiseptic to 1 of pus. To determine what inhibitory effect would be exerted by an antiseptic left behind in a wound, we took one portion of the antiseptic to—as the case might be—2 or 4 volumes of pus. It will be seen that by this plan of operation we conduct our experiments directly on the microbes and pus furnished by the wound: in other words, instead of dealing with any abstract question, we deal with the concrete question which presents itself in the particular wound infection which happens to lie before us.

The general results obtained in this investigation will be separately set forth. At the moment it will suffice to call attention to the fact that when employing 9 volumes of the antiseptic solution to 1 of pus from the infected wound, and leaving the antiseptic in application for ten minutes, a strength of 1 in 40 of carbolic acid, and strengths of 1 in 400 of biniodide of mercury, and 1 in 500 of tincture of iodine all failed to sterilise. Again, in experiments on inhibition, 1 volume of a 1 in 30 dilution of lysol, and 1 in 400 of tincture of iodine, and 1 in 200 solution of biniodide of mercury did not avail to prevent bacterial growth in 4 volumes of pus. But I must not delay over the question as to what will, with a particular antiseptic, be the particular concentration required for the attainment of a particular antibacterial effect. Let us revert to our task of trying to bring the whole question of the employment of antiseptics in wounds into some sort of proper perspective. It will help us to do this if we consider the following questions:—

(1) *Is there any reasonable prospect of sterilising the wound by an application of antiseptics?*

So far as the pus which is brought into intimate contact with the antiseptic is concerned, it would probably be possible to sterilise this by methods which will elsewhere be explained. But we have in the wound not only pus which can be reached by our antiseptic washings, but also pus which is locked up out of reach in blind alleys and pockets. And, again, we have in the infected wound not only a microbic infection of discharges, but also a microbic infection of the granulation tissue. And assuredly the really formidable difficulty in connexion with the sterilisation of the wound is that of getting sufficient penetrating power to deal with these sheltered microbes.

Now the ordinary antiseptics which we employ in wounds have as good as no penetrative power, and though it is possible to undertake comparative experiments, and, as an interesting academic exercise, to determine for a series of antiseptics how far their antibacterial influence may extend in agar or any other artificial medium, academic exercises like this ought not to divert our attention from the fact that there is not, among all the competing antiseptics, one which can penetrate into and sterilise the walls of an infected wound. In fact, if it were ever to come about that an antiseptic sterilised heavily infected wounds, that would be a matter to announce in all the evening and morning newspapers. Nor is it matter for surprise that antiseptics should not be able to penetrate into granulation tissue. Let us call to mind the fact that this is composed of continuous layers of cells; that the cell wall is a quasi-impenetrable membrane; further, that we have in the granulation tissue a very developed system of capillaries, capable of absorbing and carrying away any antiseptic that might penetrate; and, lastly, that we have also in the granulation tissue an outflowing lymph current. Having realised the inefficacy of antiseptics for the purpose of sterilising an infected wound, let us now pass to the next question. It may be formulated thus:—

(2) *Is there in point of fact any ground for the confident belief that a reduction in the number of microbes such as would be obtained by washing out of the wound with antiseptics must carry advantage to the patient?*

We have realised that it is a firmly established conviction that every procedure which leaves behind in the wound fewer microbes would, like a smaller sowing of seed, sensibly reduce the ultimate crop, and so sensibly advantage the patient. The bacteriologist does not see in this a matter of course. He thinks not only of the sowing, but of the soil. He reflects that when we are dealing with a microbe which reproduces itself rapidly on a particular medium—let us say the typhoid bacillus in peptone broth—the lightness or heaviness of the sowing would after the lapse of a comparatively short time hardly come into account again in the case of a microbe which multiplied itself very slowly in a particular medium the sowing would, unless the incubation period were indefinitely extended, make very little difference to the result. Finally, where a microbe grows very slowly on a particular medium, but very rapidly as soon as this undergoes transformation, the population of microbes found in the culture would clearly depend less on the number implanted than on the time taken to convert the nutrient substratum from a bad into a good cultivation medium. It is, in the light of what has gone before, quite easy to see the application of this to the wound. Whether few or many serophytic microbes are left behind in the wound, will make comparatively little difference to the number found in the uncorrupted lymph. For serophytes will, unless constantly kept down by phagocytosis, multiply rapidly. Again, in the same way, whether few or many sero-saprophytes are left behind, would not make much difference to the number found in the uncorrupted discharge. For sero-saprophytes grow very badly on this medium. But the factor which will readily exercise a determining influence on the result will be the rate at which the lymph becomes corrupted. And the practical conclusion emerges that what is really difficult in dealing with an infected wound is not to thin out the microbes; but afterwards to keep down their numbers. We are here carried along by our train of thought to the "dressing of the wound"; and in connexion with this we may put the following question to ourselves:—

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[1] Drugs and Vaccines in Pneumonia. Constable, 1914.

(3) *What conclusions can be drawn from the fact that frequent redressings are in connexion with the treatment of infected wounds by antiseptics indispensable?*

This is one of those questions of which we realise the fundamental significance, as soon as they formulate themselves in the mind. When our treatment has miscarried, and the wound has filled up again with pus, and this has become tryptic and has begun to digest the granulations and skin surfaces with which it comes into contact, and when bacterial poisons are being absorbed into the system, we are compelled to redress the wound. In other words, when we have been falling away we have to try to get back to the position which was reached at the previous dressing. And let us in this connexion note that it is one thing to be able when unsuccessful to fall back upon dressing, and to make of this a point of departure for trying a new way; and quite another thing to accept dressing as a necessary and inevitable element in our programme of treatment, and then not even to propose to make it a point of departure for a new therapeutic effort, but calmly to contemplate an everlastingly repeated setting out into a blind alley, and an everlastingly repeated return to our point from which we started. If grace had been given to us to see things with unsophisticated vision, it would be clear to us that to make constant redressing an integral and indispensable element in our programme of treatment is really as much of a confession of failure in the case of an infected wound as in a surgical operation. It is equivalent to saying that our method of treatment leaves the wound in a condition which makes healing impossible. And finally this leads on directly to the question—

(4) *How are we, in view of all the above, to account for confidence in the utility of the antiseptic method of treatment?*

We may here begin by bringing out that in all probability the antiseptic method, considered as a method for preventing the importation of foreign germs into the wound, has deserved everything in the way of praise that may have been said of it. For it is no doubt owing to the fact that antiseptic solutions have everywhere been employed for washing out the wounds, that there have not developed in the military hospitals in this war any of those graver forms of infection which in pre-Listerian days never failed to put in an appearance. When, however, we pass from prophylaxis to treatment; and from the consideration of the effects in connexion with the patients, taken as an aggregate, to the effects which manifest themselves in the individual who is under treatment; it is then that we come face to face with the problem as to how it has come about that the obvious non-success of the antiseptic treatment is not generally appreciated. It seems to me that this also must be put down to sophisticated vision and to the effects of education. We must remember that the practitioner of to-day has been educated up to expect to find, within a few hours after washing out an infected wound with antiseptic, as much pus and as many microbes as when he last came to dress it.

We now pass to

TREATMENT BY PHYSIOLOGICAL METHODS.

We shall do well to begin by putting quite away from us the current preconception that to abandon antiseptics would be equivalent to abandoning the programme of killing microbes in the wound. A moment's reflection will show that nature has from the very beginning of things been bringing to bear her own antibacterial agents on infecting microbes; and that we have in antiseptics merely a recent substitute for these. Moreover, the surgeon, in treating wounds, has all along, though not with conscious aim, been bringing the antibacterial agencies of the body to bear on the infecting microbes.

In treating a wound infection by physiological methods we have therefore only to follow the surgeon's lead. But we may hope, as we go along, to improve upon his methods. For we shall fix our attention on the guiding principle which he has missed.

The chief points which the surgeon has insisted upon in connexion with the treatment of infected wounds and tissues are the following.—Where there is an abscess sac, or a closed cavity containing pus, this must be laid open; and an outlet for the discharge must be provided—if possible in the most dependent part. Where an infection has spread diffusely in the tissues free incisions must be made; and where these incisions pass through infiltrated tissues they must be carried from sound skin to sound skin, and all the way down to the healthy structures underneath; and here hot fomentations should afterwards be applied. Lastly—and this is one of the teachings of the present war—when amputating through infected tissues unrestricted drainage must be provided: either by leaving the wound unsutured, or (in cases of gas phlegmon) by reverting to the mediæval method reintroduced by Fitzmaurice-Kelly of cutting the limb squarely across at the same level and dispensing entirely with flaps.[2]

Let me now try to show you that all these procedures—and it will not be necessary to consider them all in detail—will in the ordinary case bring the antibacterial agencies of the body into play. And let me further try to show you that when they fail to do this satisfactorily, they never, even when they accomplish all that the surgeon asks, do any effective good in combating the infection.

I shall begin by considering the rationale of the opening up the abscess sac. The popular explanation accounts for the utility of this procedure by telling us that it provides issue for the infected discharges. But that is quite inadequate. For not only does the operation provide issue for the infected discharges, but when it succeeds it brings about the destruction of the microbes which are embedded in the walls of the abscess sac. In reality it alters the whole situation. In the unopened abscess, the antibacterial agencies of the body are overborne by the mass effect of the infecting microbes. The white blood corpuscles in the abscess sac are paralysed, or killed; and all the antibacterial power of the lymph has gone. In the abscess that has been laid open and emptied, the infected bacteria are overborne by the mass effect exerted by the antibacterial agencies of the body. Fresh antibacterial lymph is streaming in through the walls; and phagocytically active leucocytes are emigrating into the empty cavity. But for all that the infecting bacteria are overborne, the infection is not necessarily extinguished. The laying open of the abscess does not always put everything right. The mechanical conditions may leave much to be desired. It may be necessary to obtain a larger outpouring of lymph to wash the embedded bacteria out of the walls of the wound, and to prevent them accumulating in the abscess cavity and effluent channel. Again the antibacterial agencies of the body may require to be brought into more effective operation. It may be desirable to bring to bear on the microbes both a greater volume of antibacterial lymph and a larger force of phagocytes. Or it may be proper to repress the emigration of leucocytes so as to prevent any breaking down of these in the wound.

Now the supplementary surgical procedures which were enumerated above all contribute, more or less effectively, to the accomplishment of one or other of these ends.

Drainage-tubes are devices for preventing the accumulation of infected discharges. But they do not really keep down bacterial growth in the walls of the abscess cavity. There ought to flow out from a wound not a pus composed of disintegrated leucocytes and microbes, but a lymph which is inimical to microbes and favourable to phagocytic activity; and things do not begin to clear up in a wound till its effluent runs clear.

Free incisions carried down into infiltrated tissues are intended to furnish an ample outlet. But in reality the dimensions of the outlet do not necessarily correspond to the superficial area of the incisions. In point of fact the effective outlet will in infiltrated tissues correspond only to a small section of that area. For the lymph spaces are blocked with leucocytes and fibrinous exudation. And there will, moreover, ooze out from the cut surfaces a highly coagulable lymph which very quickly seals up any open pores.

Hot fomentations, in addition to macerating and bringing away the inflammatory exudate, will induce active hyperæmia, and so increase the outflow of lymph.

Leaving operation wounds unsutured and dispensing with flaps will, as already explained, give unrestricted drainage, so far at least as the mechanical conditions are concerned.

We have now arrived at some sort of a general idea as to what would be embraced under the term "Treatment by Physiological Methods," and we have realised that the empirical procedures of the surgeon furnish us with something to work with and to improve upon.

It will be taking a first step to the improvement of these methods if we draw up for ourselves a complete list of desiderata. We shall in setting these out have to bring them into relation with the actual types of wound infection which come up for treatment.

In reality our infected wounds conform, nearly all of them, to one or other of two types. In the *first* type we have an infection of either the unclothed internal surface of the wound, or of the granulation tissue lining it. Examples of this type of infection are furnished (*a*) by recent projectile wounds whose walls are implanted with microbes; (*b*) by suppurating cavities which have just been opened up and evacuated; and (*c*) by old-standing suppurating wounds which have just been washed out and left clean. In our *second* type of wound we have an infection in a dry and infiltrated wall of an infected cavity and in the tissues contiguous to this.

In the former type of wound infection it would be a desideratum to wash the infecting microbes out of the walls of the wound free from microbes by means of a powerful outflowing current of lymph; and it would be desirable in connexion with this lymph that it should carry in with it into the infected cavity whatever force of phagocytes might be required; that it should furnish a favourable medium for, and directly assist, phagocytosis; that it should repress bacterial growth; and that it should not suffer any sensible diminution of antitryptic power if, after ineffective phagocytosis, a certain number of leucocytes broke down in it.

In the second type of infection, while everything that applies to the first type would apply, it would probably be desirable, as special measures, to repress further emigration of leucocytes, and to render the lymph incoagulable so as to prevent any stanching of the lymph outflow.

For the complete realisation of these desiderata we should require to have at disposition an agency for powerfully increasing the outflow of lymph. (I propose almost immediately to show that we have this at disposal.) Further, it would probably be necessary to have at disposition—but till further research has been carried out it is impossible to speak with certainty on this subject—means for promoting and repressing emigration. And lastly it would almost certainly be necessary to be in a position to increase at need not only the antibacterial power with respect to the infecting microbes, but also its general power of repressing the growth of sero-saprophytes. This, however, will come up for consideration in connexion with treatment by vaccine-therapy.

As just announced, I pass now to consider what agents we have at disposal for increasing the outflow of lymph. In this connexion we have already seen that the lymph flow from the wound can be increased by the application of hot fomentations.

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[2] THE LANCET, Jan. 2nd, 1915, p. 15.

It can be increased also by introducing ether into the wound—the ether, like the hot fomentations, no doubt acting by inducing active hyperæmia.

But I think that better than either of these, because it is more continuous in its action, and because it renders the lymph incoagulable, and also perhaps because it represses emigration, is the lymphagogic application which I have been recommending now these many years back. This consists of a 5 per cent. solution of common salt, mixed with ½ per cent. of citrate of soda. This brings into play osmotic forces, and "draws" the lymph out of the walls of the wound by a *vis a fronte*. The citrate of soda is added with a view to decalcify and render incoagulable the outflowing lymph.

I may perhaps be allowed to say with regard to this lymphagogic solution, or rather with regard to the simple 5 per cent. salt solution which I find works in most cases equally well, that it has in this war proved itself pre-eminently useful. When brought into application upon a dry and infiltrated wound, or a wound that is foul and covered with slough, it resolves the induration, brings back moisture to the surfaces, and cleans up the wound in a way that no other agent does. Applied in gaseous gangrene in the form of a wet dressing to incisions which have been carried down into infected tissues it causes lymph to pour out of the wounds and arrests the spread of the infection. And again, applied in gaseous gangrene to an amputated stump in cases where it has been necessary to leave infected tissues behind, it reverses the lymph stream and draws out the infected lymph—saving life in almost desperate conditions.

What would be the proper culmination and end to the treatment of wound infections by physiological methods?

We have now arrived at a point when it will be proper to keep our eyes somewhat less closely upon the ground, and to ask ourselves what kind of a coping-stone is to be placed upon our edifice of physiological treatment. For it is clearly unthinkable in connexion with such treatment carried out on scientific lines that it should conduct to nothing better, than to that everlasting dressing and redressing of the wound, into which all antiseptic treatment seems to run out. I am convinced that, when once we shall have learned exactly how to regulate the outflow of lymph, and to control emigration and phagocytosis, it will be practical policy to make an end once for all to a wound infection, and to close up the wound.

Even as we stand at present that seems to me to be to some extent a realisable ideal. While it would lead too far to follow up this question in detail, it will perhaps not be amiss to direct attention to the following points.

It will always and ever be impossible to sterilise a wound within the space of a few minutes. To wash out microbes from the granulation tissue will always take time. And we shall always have to allow time for the leucocyte to find the microbe; and for phagocytosis; and for the digestion of the microbe in the interior of the phagocyte. And again and above all, we shall always have to allow a very large margin of time for the miscarrying of lymph lavage, emigration, phagocytosis, and the intracellular destruction of the microbes, and for the necessary going back over all these processes.

In view of this it will be clear that when we embark upon physiological treatment we ought to carry it out unremittingly. And our treatment will perhaps best take the form of continuous irrigation or continuous baths.

When by these means we think we have rendered our wound sterile or nearly sterile we must in closing up the wound, or giving it an opportunity of healing up under a scab, always proceed by the method of trial and error and provide for the possibility of the microbes again taking the upper hand.

(*To be continued.*)

THE SCOTOMA OF MIGRAINE.

BY F. W. EDRIDGE-GREEN, M.D. DURH., F.R.C.S. ENG.

IT is always interesting to show that some pathological phenomenon is explained by some simple disturbance of a physiological process. I have shown that the foveal region of the retina, which contains only cones, is sensitised from the peripheral portions containing rods. A simple illustration of this will suffice. If on awaking in the morning the eyes be directed to a white ceiling, the central portion of the field of vision appears as a black spot, and light appears to invade this spot from without inwards. On closing the eye again a bluish-violet circle appears at the periphery or middle of the field of vision, contracts, and then, after breaking up into a star-shaped figure and becoming brighter, disappears, to be followed by another contracting circle. If the eye be opened when the star figure has formed in the centre it will appear as a bright rose-coloured star, much brighter than any other part of the field of vision. If, however, we wait till the star has broken up and disappeared before opening the eye it will be found that only a black spot is seen in the centre. I regard these circles as due to the circulation of photo-chemical fluid sensitised by the visual purple over the ends of the cones. It will be seen, therefore, that if there be any disturbance of the circulation of the eye so that this flow of photo-chemical fluid to the fovea be interrupted we should have a central scotoma increasing from within outwards. This is the phenomenon which is experienced in migraine. The varying sensibility of the fovea has always been a puzzle to physiologists. The old view of vision in which the rods and cones are supposed to be directly, or indirectly by means of photo-chemical substances present in them, sensitive to light, is inconceivable. On this view what would be the condition of the cone after light had acted upon it, how would the photo-chemical substances be restored whilst light is still acting on the eye? We know that the cones have no direct blood-supply. There is no evidence that the rods are percipient elements. If, however, we adopt the view that the cones are stimulated by the decomposition of the photo-chemical fluid surrounding them, we have a very simple explanation of vision which accounts for a large number of previously inexplicable facts, as, for instance, that light can impinge upon the fovea without producing any sensation, or that two after-images can change their relative places in the field of vision and become combined into one, the interval between them becoming less and less.

Willesden Green, N.W.

SOME PHYSICAL DEFECTS MET WITH IN THE RAISING OF AN ARMY.

By SIR THOMAS OLIVER, M.D. GLASG., F.R.C.P. LOND.,

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THE present crisis has given some of us the opportunity of coming into direct contact with large numbers of men drawn from various social grades and forms of human activity eager to join the ranks and serve their country. As it is more than likely that many men will yet be required for the army my remarks are not altogether uncalled for. As regards recruiting Newcastle and Tyneside have done well. Between 40,000 and 50,000 men have been given to the navy and the army from this district alone. Until the end of December the Northumberland miners had alone contributed 12,059 men; 31·1 per cent. of the men in this district between the ages of 18 and 38 have enlisted.

My own experience of the subjects later to be dealt with has been gained during the raising of the Tyneside Scottish Brigade. With the assistance of a local committee we succeeded in raising four battalions, each of 1100 men, in the short space of 22 days. The recruits have been drawn mostly from the artisan and labouring classes. Only a few of them have been clerks and shop assistants. Most of them have worked in shipyards, ironworks, and coal-mines. When Lord Kitchener invited us to raise one battalion of Tyneside Scottish he gave permission for men to be taken up to the age of 45 years instead of 38. At the time, this extension of the age-period was a concession of some assistance to us in getting men, men who were seasoned and who looked at life more seriously than those of younger years. Unless, however, careful discrimination is made it is a question whether such a concession is an unmixed benefit. Local industries and their effects upon the men must be considered. Many of the industries of Tyneside make heavy demands upon the physique and enduring powers of the men. They differ entirely from the textile industries and some of the occupations of large towns, in so far as while they stimulate development in early manhood they are hard and somewhat exhausting; they tend to cause premature decay, or at least unfitness to undertake hard muscular work in any other direction than that for which their daily work of 20 to 25 years has trained them. These men can go on doing their ordinary work after the age of 45 quite well, but it is another thing to take them to other kind of work which makes new and engrossing demands upon them, since much of the elasticity of their tissues is gone, and with it the readiness to adapt themselves to other conditions of life and labour. The number of men thus rejected as unfit for military purposes is considerable. It is 30 per cent. It was therefore with knowledge of these facts, based upon experience, that I concurred with General Ternan, Brigadier of the Tyneside Scottish, when he suggested that for men about to be *enlisted for foreign service* it would be better to make the maximum age 38 instead of 45. One of the advantages of having older men in a battalion is that in the billets they exercise an influence for good upon the younger men. They steady their juniors but in long-distance marching, 17–20 miles twice a week, and in regular systematic drill the seniors are more apt to break down. Much of the breakdown would be avoided if the training was gradual and not so accelerated. I cannot be too insistent upon this point.

The disparaging remarks I have made in regard to age and fitness only apply to men who have been exposed to hard physical work, for there are many men who either at, or immediately beyond, the age of 45 are just as good physically as, and who can probably endure more than, men of 25, but they have been drawn from work which has not caused such severe physical strain as the occupations I have referred to. This applies, for example, to the men of the "Scottish Horse" (Lord Tullibardine's) and to "Lovat's Scouts," who have been drawn mostly from the agricultural classes. The extended age-limit, therefore, is a concession to be made use of in the case of well-preserved men whose occupations have not aged them, also where men are required for home defence, and who in this country could probably be transported without great difficulty.

It is interesting to see how the previous occupation of the men has helped them as soldiers. Joiners, carpenters, and builders' labourers have been most useful to the brigade in preparing the ground and in erecting the huts in Alnwick Park. Miners, for example, have shown themselves to be extremely capable of making trenches. Military training, however, soon finds out the weak spots in a man's body, and this leads me to speak especially of coal-miners who as a class suffer much from fractures of bone in close proximity to their joints. Miners who have followed their avocation for many years, working for the greater part of the shift in a stooping position, become weak in the knees. They suffer very frequently, too, from displaced cartilage of the knee-joint. Dr. E. Napier Burnett found that the feet of middle-aged colliers—40 to 45 years of age—readily gave way during military training owing to pain and thickening of the metatarso-phalangeal joint of the great toe.

Complaints are numerous all over the country as to the manner in which the medical examination of recruits has been made. There is not the least doubt that the examinations have not been so systematically and carefully carried out as they ought to have been. This may partly have been owing to the great rush of recruits, but allowing for this there have been such glaring physical defects and deformities overlooked by the doctors that clearly only the most cursory medical examination could have been made. There is no excuse for examiners having passed men totally blind in one eye from cataract, men who have lost the index finger of the right hand, who have lost two fingers of the left hand or two toes, who have hernia, hæmorrhoids, large and readily seen varicose veins, who are flat-footed, or who are the subjects of advanced heart or lung disease. Here is an illustration.

A private, aged 30, who had been training in the south of England, consulted me as he had been discharged from the army as being physically unfit. The man could hardly walk across the floor of my consulting room without experiencing great dyspnœa. His feet and legs were swollen. On exposing the chest the apex of the heart could be readily seen and felt beating 2 inches below and external to the left nipple. On auscultation a loud rough systolic murmur could be heard which the merest tyro in medicine could have detected. The cardiac murmur must have been there at the date of examination, for within four weeks after joining his battalion this man had made his first route march of 14 miles with a 20 minutes' break mid-way. On that occasion it took him all his time to walk into the camp. Shortness of breath developed the same evening or during next day, and in five days afterwards he was discharged as unfit for military service.

This case does not by any means stand alone. In other instances the men had not been stripped sufficiently, otherwise paralysed shoulders and paralysed muscles of arms and forearms would have been detected. The number of men who have been allowed to pass into the army with flat feet and hammer toes is almost incredible.

The object of my remarks is as much as anything to draw the attention of medical examiners to the necessity of exercising greater care than many of them have been doing. Apart from the expense, it lightens the work of future administration. Carelessness on the part of medical examiners has been evident in such a large number of instances that by permitting physically defective men to be attested, fed, uniformed, and drilled, who are obliged to be discharged a few days or weeks after attestation, considerable expense has been incurred to the country, disappointment caused to the rejected men, and through them returning home dissatisfied further recruitment has been made more difficult. It is estimated that the attestation along with the bonus, the clothing, feeding, and subsequent discharge of those unfit for military service has cost the country nearly £2,000,000.

As regards the state of the teeth of recruits, the War Office has made valuable concessions. Bad teeth are so frequently met with among working men that it was clear unless something was done in regard thereto many men otherwise physically fit were being lost to their country's service. Free dental treatment at dental hospitals was a step in the right direction. So far as the Tyneside Scottish battalions are concerned, the arrangement with the hospital worked satisfactorily. The work at the hospital was restricted at first to *extraction*, with or without local anæsthesia as the patient preferred, and to *fillings*. Dentures were subsequently allowed, but these were only given to men of good character and of good physique, men who were likely to appreciate the gift. One drawback to supplying artificial teeth is that if a man at the front is dissatisfied or has a grievance he may throw his dentures away, and, pleading inability to masticate food, he may, when he can ill be spared, have to be sent home.

The importance of testing the eyesight goes without saying, and yet in regard to this there have been several instances of men having been attested with very grave visual defects. Very interesting information has been gained in Newcastle in regard to this subject of eyesight. A large number of our recruits has been drawn from the mining population. It is difficult to give the percentage, but in some of the battalions miners form 60 to 70 per cent. of the men. We were hardly prepared for the large number of cases of nystagmus which developed in the men after they had been in the billets for several days or a few weeks. Sometimes the nystagmus has been of the most pronounced type. There is nothing to indicate that the oscillatory condition of the eyeballs was always present at the primary medical examination. It might have developed as the men passed longer time in the daylight than their work previously allowed them. This, however, cannot be the explanation, otherwise nystagmus would ere this have developed during miners' strikes. So pronounced has been the nystagmus in some of the men, and so deficient their power of vision, that serious accidents have arisen. Many of the men who are the subjects of it have great difficulty in seeing clearly at the time daylight passes into twilight. In one instance a recruit walked into and broke the large plate-glass window of a shop. He did not know that he had reached the window. Where nystagmus has been well developed none of the men have improved rapidly enough under observation and treatment to be retained; they had, therefore, to be dismissed. Where the defect was slight some of the men have been kept for lower forms of administrative work. Nystagmus is a disqualification for military service. The subjects of it cannot even undertake the ordinary physical drills since the rapid movements required, including those of rotation of head and body, aggravate any nystagmus that may be present. Since in many of the men who are affected with it the right eye is worse than the left, the men can only shoot from the left shoulder. Without expressing an opinion as to the disability of associating such men in the trenches and elsewhere with those who fire from the right shoulder, a far more serious aspect of the question relates to sentry duty. As already stated, it is just as evening approaches, when the daylight is fading, that the vision of these men is worst. A sentinel on duty thus affected might, therefore, not through carelessness but disease, endanger not only the lives of the men of a whole battalion but wreck the chances of our troops at a critical moment through not observing the approach of the enemy. I am led to believe that the high percentage of nystagmus met with among North Country coal miners does not equally prevail in those drawn from other parts of the country.

Albuminuria has been found in a small percentage of otherwise apparently healthy recruits after hard physical drill and long route marching.

The small amount of venereal disease among the men of the Tyneside Scottish battalions has been a cause of congratulation. Dr. N. Maclay, who as civil surgeon was in charge for a time of one of the battalions, informs me that it has not been more than 1 to 2 per cent. A similar remark applies to crime. It is only right to say, considering the fact that in Newcastle and district we had a few months ago upwards of 100,000 soldiers suddenly implanted in our midst, that the amount of crime has been extremely small.

As regards inoculation for typhoid fever, the Tyneside Scottish raised no difficulty. Some of the battalions were done to a man without any dissent. At one stage of the proceedings it was thought the preventive measure ran the risk of receiving a check as one of the men died shortly after the inoculation, but fortunately, although the civil medical practitioner who had attended the patient gave a certificate that death was due to (1) typhoid inoculation, (2) pneumonia and heart failure, the necropsy revealed heart disease of long standing, chronic pleurisy, and an alcoholic liver.

Newcastle-upon-Tyne.

ROYAL SOCIETY OF ARTS.—Lectures will be delivered at the Royal Society of Arts, John-street, W.C., on April 26th and May 3rd, 10th, and 17th by Dr. David Somerville, the subject being Foodstuffs. On May 5th Mr. Augustus Vernon Harcourt, D.Sc., F.R.S., will deal with the subjects of Measurement of Efficiency of Domestic Fires and a Simple and Smokeless Grate. The lecture hour on each occasion is 8 P.M.

THE TREATMENT OF GUNSHOT AND SHELL WOUNDS.

WITH SPECIAL REFERENCE TO CARBOLISED GLUCOSE AS A DRESSING.

BY H. BECKWITH WHITEHOUSE, M.S. LOND., F.R.C.S. ENG.,
LATE HUNTERIAN PROFESSOR, ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE character of the wounds received during the present war has given rise to much discussion and criticism of the most appropriate treatment to be adopted. During the early months of the campaign, before the pathology underlying the various lesions had been investigated, treatment was conducted upon established and previously conceived ideas. It was soon noted that such methods had very little practical value in combating the severe sepsis supervening upon trauma produced by modern artillery and rifle fire. It was found that the "first field dressing" was quite powerless to prevent the ingress of pathogenic micro-organisms. The germs had already been inoculated before the dressing was applied. Experiments also proved that the application of pure liquefied carbolic acid to the wounded surfaces was not sufficient to combat those pathogenic organisms carried far into the tissues and quite inaccessible to outward applications. It must then be accepted that the great majority of wounds arriving at the base hospitals from the front are already septic upon arrival. In many cases the sepsis is of a very grave character and varies directly with the nature of the wound, the period of transit, and the treatment that has been adopted during this period.

The second of these factors may be dismissed with the remark that, considering the exigencies of war, the arrangements with regard to the evacuation of wounded from the front to the base appear to be such that very little, if anything, is to be desired.

As to the treatment during the journey from the front and subsequently, research has proved that radical changes are necessary in the methods employed. To these researches the army and the medical profession are indebted to Colonel Sir Almroth Wright. He has proved the absolute inefficiency of antiseptics applied to the large, irregular, and frequently very deep wounds produced by modern missiles.

Lymph Lavage: Employment of Carbolised Glucose.

To those working at the base it was evident quite early in the campaign that the ordinary methods then in use for treating septic wounds were not efficient in obtaining the best results. Wounds did not heal rapidly in spite of daily application of various antiseptic solutions, repeated fomentations, and the like. The importance of obtaining a rapidly healing wound can hardly be overestimated from a military standpoint. In the present campaign the functions of a large base hospital in France are mainly twofold—viz., (1) to cure as quickly as possible those men who can within a reasonably short time be brought to a standard of efficiency; and (2) to render fit to travel those patients whose wounds are too severe to allow early return to the firing line. Added to which, sufficient accommodation must always be available to cope with the sudden and possibly unexpected arrival of large convoys of wounded from the clearing stations and field ambulances. Unless wounds heal rapidly a congestion of cases occurs, due to inability to transfer patients either to England or convalescent camps. Any method, therefore, which favours this end appears deserving of consideration by those engaged in treating the large number of septic wounds continually arriving from the front. Wright has shown that diminution in sepsis can be most readily attained not by the application of bactericidal substances from without, but rather by utilising the antibacterial bodies normally circulating in the blood and lymph. Aerobic and anaerobic organisms are present in the nooks and crannies of wounds in positions quite inaccessible to any antiseptic solution applied from without, but readily destroyed if sufficient bactericidal bodies can be brought into contact with the same by means of the lymph stream. In other words, "lymph lavage" is the all-important factor in the treatment of septic wounds. Wright suggested that this may be established by the application of hypertonic solutions to wound surfaces. He advised the application of a solution of sodium chloride, 5 per cent., with the addition of sodium citrate, 1 per cent., to prevent coagulation of lymph in the tissue interstices.

Adopting Wright's recommendations, I treated a series of shell and gunshot wounds of varying degrees of severity, admitted to No. 8 General Hospital, Rouen, by the application of hypertonic saline solution. The results obtained were sufficiently convincing to prove the correctness of his views. At the same time, the degree of lymph lavage produced by a saline solution was not great, and although sepsis diminished and wounds healed the important factor of time was not sensibly diminished. It appeared to me, therefore, that even better results were possible by employing a solution of greater osmotic power. The substance that occurred to me was glucose. I therefore had a solution of liquid glucose prepared containing sufficient carbolic acid to have a strength of 1 in 80. This solution was applied directly to the wound surfaces and by means of plugs was carried into the recesses of the same. The results quite exceeded my most sanguine expectations. In a few hours sufficient lymph was exuded from each case to saturate the whole of the wool and bandage covering the part. Coincidently the purulent character of the discharge changed, and in a day or two a healthy granulating surface remained. The cases so far treated by carbolised glucose dressings include severe compound fractures and large lacerated wounds of the extremities, some involving the elbow-joint and necessitating excision of the joint. One case of shell wound of the cranium exposing the dura mater and injuring the superior longitudinal sinus was also so treated. All the cases made a rapid recovery and were ready for transfer to England at the end of seven days.

Treatment of Septic Wounds.

The routine which I now adopt in the treatment of all septic wounds may broadly be expressed as follows: (1) Removal of foreign bodies after location by X rays and if anatomically possible; (2) application of efficient drainage by enlargement of the wounds of entry and exit, or by fresh incisions into the tissues if required; (3) removal of as much necrotic and contused tissue and blood clot as possible; (4) application of warm hydrogen peroxide (20 vols.) to the recesses of the wound if anaerobic infection is suspected; and (5) establishment of profuse lymph lavage by the application of a solution of carbolised glucose on white gauze dressing or gauze plugs.

As regards the removal of foreign bodies, it must be remembered that Mauser and shrapnel bullets and fragments of shell are not the only objects that require extraction. Practically 50 per cent. of septic wounds contain more or less large portions of cloth carried deep into the tissues, and easily overlooked unless direct search is made. These fragments of "wardrobe," often extremely foul, are found not only with Mauser and shell wounds where the missile is retained, but also quite frequently in perforating injuries. They are a fertile source of severe and prolonged sepsis, and a danger to the individual until removal is effected. Foreign bodies of this nature are unrecognisable by the X rays, and their frequent presence is one very good reason why all septic wounds and sinuses should be carefully explored. I use the word carefully advisedly. These cases, many of them very serious, should not be regarded as matters of little concern, and any operative interference should only be in the hands of those qualified by practice and experience to conduct such.

Concerning the question of efficient drainage, much depends upon the type of injury. In the case of large lacerated wounds with considerable loss of tissue, practically the whole surface is exposed and no further drainage is required. Care must be taken above all not to bank up such wounds with piles of gauze and wool and so defeat nature's own end. All that is required is a layer of gauze saturated in glucose solution, covered by just sufficient absorbent wool to soak up the very free discharge. Fomentations are the very worst type of dressing to employ in such wounds, especially if backed up with jaconet or batiste. These latter are now entirely absent from my wards, and since they have been discarded a marked improvement has been noted in the condition of the wounds.

Referring to the removal of necrotic and contused tissue and blood clot, it may be argued that the leucocytic zone is broken down and infection implanted upon tissues previously healthy. Experience has shown that this risk is by no means real. In fact, wounds so treated heal more rapidly after removal of all débris and necrotic tissue than if time was expended in waiting for sloughs to separate. In the case of compound fractures some doubt has been expressed as to the advisability of removing loose fragments of bone. In the presence of severe sepsis I unhesitatingly recommend that all such loose fragments be removed at the time that the wound is originally explored. Unless this is done convalescence is delayed and sooner or later the fragments are discharged as foreign bodies or require operative removal for persistent sinuses. In many cases of compound fracture, apart from other considerations, removal of loose portions of bone is required in order to establish free drainage. The fractures examined during the present campaign are in many cases remarkable for the extreme damage done to the bones. The osseous tissue is practically pulverised, and removal of the loose fragments is necessary before efficient drainage is possible. Once a free passage has been prepared for the evacuation of the discharges, all that remains is to establish a free and continuous flow of lymph by means of osmotic power. Glucose answers this requirement in an admirable manner. In the case of deep sinuses and bullet tracks it may be introduced in the form of suppositories containing sodium citrate with a basis of spermaceti or ol. theobrom. On the other hand, for large indolent wound surfaces it may be applied as an ointment containing sodium citrate (1 per cent.) with a lanoline basis. Where possible, such as in fixed hospitals, the best results appear to be obtained by soaking a layer of gauze or wisp of gauze plugging in a saturated solution of glucose containing carbolic acid (1 in 80) and applying it directly to the wound surface. Sufficient wool is added to the dressing to absorb the discharge, and no more. The part should on no account be firmly bandaged. In fact, in a fixed hospital, bandaging unless required for immobilisation purposes in conjunction with splints is best discarded altogether. The dressing is changed as soon as the discharge appears upon the surface of the wool. It may be asked, What is the value of carbolic acid in the dressing? It is added to the glucose solution to destroy those micro-organisms which are present on the surface of the wound and which are brought from the deeper tissues by the free flow of lymph. Its presence appears to prevent all foulness of the discharge and renders the wound and dressing free from odour. In a strength of 1 in 80 it does not damage the tissues, and further does not militate against healing of the wound.

Treatment at Dressing and Clearing Stations.

In conclusion, a few suggestions may be offered as to what can be done at the front and on the lines of communication to diminish the amount of sepsis during transit. Drainage must be established and lymph lavage instituted. At the front elaborate measures are impossible, and the very simplest methods must be employed. If it is impossible to make adequate arrangements for free drainage, at any rate care should be taken that the measures employed do not prevent it. In other words, all dressings and bandages should be applied quite loosely. Men appear to forget that in the case of extremities the limb almost invariably swells during its transit from the front to the next station, and that a bandage that appears properly applied at the dressing station may be an absolute danger if any delay is experienced during transit. Lymph lavage can be promoted by inserting one or more glucose and sodium citrate suppositories into the depths of a wound or along the track of a bullet. These suppositories are cheap, easily carried, and readily applied. In fact, it is much easier to slip one of these into a wound than to apply tinctura iodi with a brush. Finally, when the cases reach a clearing station or fixed station, where more detailed treatment can be employed, each wound should be examined with a view to establishing more efficient drainage if such does not already exist. In the majority of cases, if the part is swollen and œdematous and pyrexia present, it is quite sufficient to enlarge the wound by incision, opening up tracks and carrying a rubber drainage-tube into its depths. A carbolised glucose dressing should then be applied and glucose injected into the deep parts of the wounds. The case may then be transferred to the base hospitals, where facilities are available for meeting all surgical requirements.

If this routine were carried out I feel convinced that very soon there would be a considerable diminution in the number of foul suppurating wounds arriving from the dressing stations and clearing hospitals. Treatment of these septic cases is quite simple if conducted upon a proved physiological basis. It may be summed up in very few words—viz., (1) light bandaging, (2) free drainage, and (3) lymph lavage.

BRAIN ABSCESS IN A CASE OF PARATYPHOID B.

BY R. L. SCOTT, M.B., F.R.C.S.EDIN.,
TEMPORARY LIEUTENANT, R.A.M.C.;
AND
WILLIAM H. JOHNSTON, B.A., M.B. EDIN.,
TEMPORARY LIEUTENANT, R.A.M.C.

THE importance of a more accurate clinical and bacteriological differentiation between diseases of the coli group appears to be amply justified by the findings of the present campaign. Statistics are as yet incomplete, but those we have since the outbreak of hostilities demand a closer investigation of the interesting paratyphoid group. The following case of paratyphoid B., which recently occurred at No. 1 General Hospital, presents a particularly interesting complication.

The patient, aged 21 years, a private, was admitted into No. 1 General Hospital on Feb. 3rd, 1915. He gave a history of feeling ill, with pains in the abdomen, diarrhœa, and headache commencing on Jan. 26th. In addition, he now complained of pains in the back and legs. There were sordes, furred tongue, and characteristic spots on the abdomen, which was tympanitic and tender on palpation. Spleen enlarged. No abnormal signs in lungs and heart. Urine normal. Nothing characteristic in the fæces. Pulse 110. Temperature 103° F. On Feb. 4th a provisional diagnosis of enteric fever was made and the patient was removed to the isolation division of the hospital. He complained of severe pain in the right side of the head and seemed very ill and drowsy. The pulse became dicrotic. The blood was cultivated, but proved to be sterile. No organism of the typhoid group could be isolated from the urine or fæces.

On Feb. 8th the patient developed a hemiplegia of the left arm and leg; his left facial and left hypoglossal nerves were also paralysed. He developed incontinence of urine and fæces. There was no vomiting. No abdominal or cremasteric reflexes could be elicited. His expression was clouded and he became more drowsy, dull, and apathetic. He replied to questions very slowly, thickly, and not immediately, and yawned occasionally. He complained of pain in the right temporal region and at the back of the right ear. Percussion over these areas made him wince. There was no œdema over either mastoid, but tenderness was present over the right mastoid area, especially over the tip. Tenderness was also elicited over and down the right side of the neck in line with the internal jugular. On examination of the ears, beyond a slightly injected Shrapnell's membrane and a little injection around the handle of the malleus on the right side, nothing of note was found. There were no signs of past or present middle-ear disease. Nose and throat examination revealed nothing. Examination of the fundi was difficult, but the edges of the right disc appeared rather hyperæmic and indistinct. The pulse was no longer dicrotic, but full and slow; the temperature, on the other hand, remained high. This lack of conformity was very obvious on the chart.

A diagnosis of right temporo-sphenoidal abscess was made, and on the strength of the definite tenderness over the right mastoid it was decided to explore this region first, and if nothing should be found to trephine over the usual site. Unfortunately the patient collapsed under the anæsthetic before any operative procedure was begun. It was deemed inadvisable to proceed any further. Lumbar puncture was performed and 10 c.c. of clear cerebro-spinal fluid were withdrawn under no excess of pressure; cultivations of it were sterile. The subsequent history of the case was characteristic of a gradually increasing intracranial pressure. Coma and full stertor developed on Feb. 12th and death supervened the next morning.

Necropsy.—Post-mortem examination revealed the following:—The spleen, somewhat enlarged, was attached by recent adhesions to the diaphragm. The upper pole showed purulent softening. The walls of the greater part of the ileum were atrophic, thin, and transparent, and in parts intensely hyperæmic. There was a uniform enlargement of the corresponding mesenteric glands, those in the ileocæcal angle being most markedly affected. In that area individual glands were as large as beans; some were fused by an inflammatory œdema and showed on section central necrosis. The serous aspect of the cæcum presented a picture of intense hyperæmia with numerous adhesions. The lymphadenoid tissue of the ileum appeared to be but slightly affected, considering the amount and severity of the ulceration. The appearance suggested a general hypoplasia of the lymphadenoid tissue. Ulceration was confined to the lower two feet of the ileum and to the adjacent portion of the cæcum. The ulcers, irregularly placed, were pitted, varying in size from a pea to a shilling, with sinuous edges raised towards the mucous coat, well marked and slightly indurated. Resting on the muscularis mucosæ the floor was granular and of the usual striated appearance. The opposed area of serous surface showed neither localised peritonitis nor adhesions, and there was an entire absence of subserous follicles suggestive of tuberculous infection. The ulcers did not tend to encircle the gut, but had a follicular distribution, apparently with no definite relation to the lymphadenoid tissue. They suggested an acute process and appeared of recent formation. The largest, occurring near the ileo-cæcal valve, measured three-quarters of an inch across. There appeared a marked dissimilarity from the typical lesions of both enteric fever and tuberculosis.

The vessels of the dura mater were unduly injected. Beyond a slight engorgement of the capillaries leading down from the anterior part of the Sylvian fissure, the arachno-pial membrane was normal. There was a considerable œdema of the right brain well seen in the frontal and temporo-sphenoidal lobes. The right hemisphere was much larger than the left, overlapping it along the longitudinal fissure and to a certain extent displacing it. On section, an abscess about the size of a shilling was found embedded in the outer and posterior aspect of the right optic thalamus. The adjacent limb of the right internal capsule was partially destroyed. Pigmentation and encapsulisation were absent. The œdema on section was very obvious. There were the usual displacement and distortion of mesial structures, the fornix being pushed aside and the left ventricle being flattened. The abscess had not ruptured into the right ventricle.

For the following report we are indebted to Lieutenant M. K. Acheson, bacteriologist, No. 1 General Hospital. "Several attempts were made with negative results during life to isolate from the blood, fæces, urine, and cerebro-spinal fluid the organism causing the patient's illness. At the post-mortem examination a non-motile, Gram-negative bacillus was obtained in pure culture from the spleen. In bile salt glucose and mannite it gave acid and gas; no change took place in bile salt lactose. The Bordet-Durham reaction was tried with results shown in the following table:—

—	Dilution.				
	1 in 40.	1 in 80.	1 in 160.	1 in 320.	1 in 1000.
Typhoid	Complete.	Partial.	Partial.	Negative.	Negative.
Paratyphoid A.	Almost complete.	,,	Very slight.	,,	,,
Paratyphoid B.	Complete.	Complete.	Partial.	Partial.	Partial.

The Bordet-Durham reaction for Gaertner could not be performed as no agglutinating serum was available.

As the brain was at once placed in formalin solution no bacillus could be isolated from the abscess when sections were cut. It is unfortunate that the Bordet-Durham reaction for Gaertner could not be performed, but the evidence, clinically and bacteriologically, seemed fairly conclusive that the disease was due to the bacillus paratyphoid B."

A CASE OF HYSTERO-CATALEPSY.[1]

BY LIONEL A. WEATHERLY, M.D. ABERD.

THE following case is interesting on account of its rarity, the difficulty of early diagnosis and prognosis, and the favourable result after the case had looked absolutely hopeless. Such a case is mentioned in no English text-books that I have consulted, and leading psychologists and neurologists have written me that they have had no similar case in their practice. I saw the patient in consultation with Mr. Maitland Scott at a nursing home on July 14th, 1914, and at his and the mother's request she was removed to my care on the same day.

The patient was a spinster aged 35, but looked much younger. She came of neurotic parents. A brother was neurotic. The mother was always delicate and within the year had had a paralytic seizure. The patient had always lived with her mother and had been her constant companion. At the age of 17 she had a nervous breakdown and had been sent from home for a short time, but soon recovered. Some six months before admission she had been in constant attendance on her mother by day and night, much against the wishes of her medical attendant, Mr. Scott. The mother was most exacting, never liking the daughter to be out of her sight, and she was getting no sleep at night and no change by day. A few weeks before I saw her she had been so unwell and run down that she was sent away for a change with a companion. During this period her behaviour was somewhat strange. At the last place they stayed she was lost for a whole day, and when found could give no rational account of what she had been doing or her reason for absenting herself. She was then brought to Bournemouth to a nursing home. There was no history of masturbation.

I saw the patient on the morning of July 14th in consultation with Mr. Scott. She was laughing and singing; we had great difficulty in getting her to answer any direct question coherently. There was considerable mental excitement and restlessness and confusion of ideas. She had a typical hysterical appearance, with considerable tremor of eyelids. Reflexes were all exaggerated. Powers of coördination were normal. I pronounced the case as one of hysteria major due to stress and anxiety. Catamenia had been absent for some two months. As the nursing home could not keep her there because she was disturbing some surgical cases by her singing, and as she consented to come under my care, she was admitted into my house on the same evening.

On admission she was hysterically excited, with a very weak pulse and definitely anæmic. Isolation from friends and relations was at once agreed upon. For a few days she was quieter at times and spoke quite sensibly to her nurses and lady companion, talking about events some weeks previous to her leaving home, but seemingly had no recollection of more recent events. At other times she would only laugh and repeat questions without any attempt to answer them. She took her nourishment well, and had very fairly good nights with ʒi doses of compound cerebral sedative (Parke Davis), by day taking an iron tonic with valerian and nux vomica. In about 10 days' time some stereotyped movements of the arms and muscles of the face began, and the eyes were either wide open or tightly closed. The muscular tension in these movements was not always very marked at first and rigidity would after a short time lessen and the limbs could be easily moved (flexibilitas cerea). On August 1st the patient became worse. Some trismus set in. Great difficulty at times in feeding in consequence of violent laryngeal spasm. A rash now appeared on the arms, chest, and legs. There was no rise of temperature. The rash had the appearance of measles and urticaria and lasted 18 days. It was evidently trophic and gradually increased, and the fingers and toes had a myxœdematous aspect. Suprarenal extract (B. & W.), 5 gr. doses, was given by the mouth or rectum three times a day, and the rash gradually disappeared, but great desquamation followed.

During the period from August 1st to 18th she had several trance-like attacks, in which for some hours all reflexes were absent, including the conjunctival reflex. Prior to this trance condition there would be great rigidity of the limbs, the head thrown backwards, and the jaws either tightly closed or widely opened. After about an hour the rigidity would lessen, but the trance-like condition remained for some hours. Definite refusal of food now took place. Any attempt at tube-feeding by the nose or mouth was rendered impossible as violent spasms set in, and the patient almost collapsed. Rectal feeding was resorted to—beef enules, champagne and eggs, brandy and white of egg, &c. The pulse could hardly be felt or counted. Pituitary gland extract was injected hypodermically, and after each such injection the pulse began slightly to improve. This was alternated with hypodermic injections of 1/30 gr. strychnine. Mr. Scott saw the patient with me constantly, and I was with her several times in the night. Her relatives were summoned and death was expected every hour. She was greatly emaciated and almost unconscious. On the eighth day of rectal feeding the rectum no longer retained what was injected, and for 24 hours glucose was the only thing that could be retained, given in small doses.

On Sept. 3rd the patient became rather more conscious, and small doses of Valentine's meat juice and Brand's essence of beef were swallowed.

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[1] Read before the Bournemouth Medical Society.

Gradually more nourishment was taken. Virol, cod-liver oil and malt, and a preparation of iron were now able to be administered, and she gradually improved physically, but for some days she had a return of the stereotyped movements of the hands and arms, and she did not recognise her relatives. She gradually improved, and by the end of September catamenia appeared, she became much more rational, took plenty of nourishment, and in about ten days' time she was able to join our family circle, and took short walks, played games, read, and made a complete recovery, and was discharged on Nov. 3rd.

Since then, by my advice, the patient has had a companion, has not been so constantly with her mother, and has been out much more and to places of amusement and has kept quite well, with the exception of occasional trophic skin affections, which Mr. Scott tells me have cleared up under thyroid or suprarenal extract.

I think I am justified in calling this a case of hystero-catalepsy. When the katatonic symptoms commenced I rather suspected one had to deal with a case of dementia præcox, but her age and some of her symptoms were, to my mind, against this, and I think the marked hysterical element was proved by the more or less sudden improvement and ultimate recovery after being at death's door. It will, of course, be interesting to know the further history of her condition, as cases are on record of recoverable dementia præcox, with an almost inevitable relapse.

Bournemouth.

THE X RAY THEATRE IN WAR HOSPITALS.

By JOHN R. CALDWELL, M.B., Ch.B. St. And.,
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It is the experience of most who have to deal with the extraction of foreign bodies from the tissues that, in spite of the most accurate localisation, time and time again there are the most mortifying failures. The early realisation of this prompted us, at the Baltic and Corn Exchange Hospital, Ecole Sophie Berthelot, Calais, to seek for some method which afforded more direct guidance, and to this end we experimented for a time with the electric probe; but after five months of experience of the removal of foreign bodies, directly under the X rays, we venture to plead for the more routine adoption of a method which has afforded us so much satisfaction.

There are two chief reasons why we plead for the installation of an X ray theatre in all large war hospitals. First, the speed with which extractions can be performed—a factor of importance both in that the maximum of cases can be done in the minimum of time, and in that prolonged anæsthesia is avoided for the patient; and, secondly, the minimum of damage is done to the tissues. Over and over again we have had old, healed cases here for extraction, showing most extensive scars, souvenirs of prolonged search, in which we were able to extract the foreign body *viâ* incisions incomparably smaller than their less fortunate predecessors. It is not our intention to minimise the value of accurate localisation, for that, of course, with this method is still necessary, especially when the trunk or head is involved. The X ray room here is equipped exactly as an operating theatre, but a few points may be worthy of note regarding technique and the general method of working in the theatre. The apparatus employed is by Dean, of London, and has given complete satisfaction. The table employed is three feet broad, with a movable tube box underneath, and the top used for operating is an extra-broad canvas stretcher. On this table it is possible, with the guidance of the rays, to operate on almost any part of the body. In place of mackintosh sheeting we employ jaconet, as the former is too opaque for general use (indeed, it acts as a fluorescent screen). It is obvious that the surgeon must always stand at the same side of the table, otherwise the proximity of the high-tension wires might prove annoying; but if the induction coil be on wheels, it is possible for the assistant to stand on the opposite side, the high-tension wires being made to approach the table obliquely from the opposite end. As assistance is not necessary during the actual extraction, he can stand aside while the apparatus is working. For the protection of the operator's hands we use here extra-thick rubber gloves; if more protection is desired, a thin sheet of aluminium may be placed between the tube and the patient.

The lighting of the theatre was at first very troublesome, the ideal light for the X ray room being subdued, while the reverse is true of the operating theatre. This difficulty we have overcome by employing an old automobile headlight over the table. A 100 candle-power electric lamp is placed behind the condenser, thereby concentrating the light only on the area of operation, the rest of the room being in comparative darkness. This permits careful dissections to be made when necessary, the eyes retaining that acuity so necessary for the actual extraction.

Regarding the administration of anæsthetics it is sometimes necessary for this is to be done for a time in the dark; the anæsthetist is equipped with a covered lamp, controlled by an ordinary electric bell push, and this flashed occasionally and working through a small diaphragm affords him sufficient light without interfering with the course of the operation. It is often necessary for anæsthetics to be administered with the patient in the prone position, but as in most cases the operation is a rapid one there has never been any trouble.

All cases admitted here are subjected to a preliminary X ray examination, and if a foreign body is present it is localised with a thoroughness which varies with the part involved. Should the trunk, the head, or the neck be implicated stereoscopic radiograms are taken. For the extremities all that is usually necessary is to determine roughly by moving the tube the relationship of the foreign body to neighbouring bony structures. Each case, however, must be judged on its own merits.

To facilitate description we may roughly divide cases to be treated into two great classes: (1) old and healed; and (2) recent and septic. In the old and healed the preparation is as for an ordinary operation; the towels are applied in the usual fashion, but we might add that it is advisable to clip them firmly to the skin, so that in the darkness they may retain their position. A towel is set aside for the screen of sufficient size to cover its under surface completely with a margin all around of about 2 inches. This is laid over the cleansed area and the screen is placed in position by the theatre orderly. The assistant now clips on the towel at the four corners, and for this purpose we employ Dieffenbach's bull-dog forceps. Before the actual commencement of the operation the X ray tube is brought into the vicinity of the part involved, and with the orderly supporting the screen the rays are turned on and the lights off. The foreign body is now accurately "centred," and to effect this a small diaphragm is employed. The movements of the tube box can be accomplished with the operator's foot, and these are rendered easier if a toecap to receive the point of the boot be fixed to the front of the box. The point of a pair of Spencer Wells forceps is now laid on the skin so that it coincides with the shadow on the screen. The light is now turned on and the screen removed. With due regard to anatomical considerations the incision is made, not necessarily immediately over the foreign body, for, indeed, an oblique approach is often easier. The skin incision should be fairly free, and when the muscles have been exposed blunt dissection can be employed. No violence in the extraction is permissible, and should the foreign body be in the vicinity of important structures free and careful dissection in a good light is demanded, the operation being merely controlled by occasional reference to the screen. The forceps employed here for actually extracting foreign bodies are usually Kocher's or long Spencer Wells's. As a guide to the correct estimation of the depth of the foreign body it is extremely useful, while the forceps are approaching to move the tube box from side to side with the foot. The relative movement of the foreign body and the point of the forceps indicates their distance apart; for example, if the ball apparently moves somewhat faster than the point of the forceps, the ball lies somewhat deeper. With experience it is scarcely ever necessary to move the tube, more particularly in the case of the extremities, for here a slight rotatory movement of the part supplies the necessary information. The extraction having been performed, the wound is sutured in the ordinary way.

In septic cases, where a sinus exists, the preliminary cleansing of the part and of the sinus is of the utmost importance. For this purpose we employ a triple irrigating apparatus; three irrigators mounted on a stand are connected so that each in turn may be made to discharge *viâ* one cannula.

The solutions employed are: (1) Biniodide of mercury (1 in 1000); (2) carbolic acid (1 in 40); and (3) hydrogen peroxide (1 in 3). The wound is copiously irrigated with these one after the other. This treatment may seem drastic, but is no more than is merited by the frightful septicity with which we so frequently have to deal. The actual extraction of the foreign body is now performed, but here free incisions are very desirable. It is usual to approach the foreign body by an incision which will, by reason of a dependent situation, afford the best drainage possible. In more quiescent cases an approach *viâ* the sinus is frequently sufficient. It is often of value to leave the forceps and the foreign body *in situ*, and enlarge the tract freely before extracting; in this way foreign matters, such as cloth, &c., perhaps of greater importance even than shrapnel and bullet, can be in many cases removed.

As indicating the general applicability of the method, we may mention that with the guidance of the rays we have removed foreign bodies from the posterior mediastinum and from the spheno-maxillary fossa; then there was a pelvic case in which two previous abortive efforts had been made to extract a bullet. In this case we successfully removed the bullet interior from the region of the great sacro-sciatic ligament and the mantle of the same bullet from behind the neck of the femur. Foreign bodies in the neighbourhood of the spine and in medulla of bones have likewise been removed with a success which is all the more gratifying as many of these cases showed evidence of previous attempts. In multiple shell wounds this method of treatment gives much satisfaction; in these cases each wound in itself seems trifling, but the sum total of upwards of six suppurating foci induces such a toxæmic state that prolonged anæsthesia and much interference are very undesirable. We prefer also to operate on compound fractures on the X ray table, as the steps of the operation from start to finish can be controlled and guided by reference to the screen. The value of the method is unquestionable, and while we cannot claim for it originality, we are not aware that it has become a routine method of treatment in any other hospital. With a little experience it becomes possible to remove minute fragments which in the ordinary way would necessitate frightful mutilation.

In conclusion, I wish to acknowledge my indebtedness to Mr. C. M. Hewer, surgeon to the hospital, for his invaluable aid in meeting the many difficulties which arose in the evolution of the X ray theatre.

A RE-INVESTIGATION ON THE NATURE OF THE CELLULAR ELEMENTS PRESENT IN MILK.*

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AND
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IN a series of papers Hewlett, Villar, and Revis[1] recorded the results of investigations on the nature of the cellular elements present in milk. It was shown that cells of various kinds are always present in the milk of perfectly healthy cows, sometimes in enormous numbers, and that no reason could be assigned for the considerable variation in the number of the cells which occurs in the milk of different cows. A preliminary classification of these cells was formulated, and the opinion was expressed that the vast majority of them are not leucocytes, and that the "multinucleated cells" which are frequently present in considerable numbers and have a superficial resemblance to polymorphonuclear leucocytes are for the most part the "germinal cells" of Winkler derived from the epithelial layer of the glandular tissue of the udder and are embryonic cells which develop into epithelial cells.

Breed[2] has recently again stated that these cells are polymorphonuclear leucocytes derived from the blood, and asserts that the evidence formerly adduced by Hewlett, Villar, and Revis is not convincing. As, however, Breed produces no evidence at all in support of his statement, and also having regard to the importance of the subject from the public health point of view, we have considered it advisable to re-investigate the nature of the cellular elements present in milk, to revise their classification, and to attempt to determine the factors which influence their number in the milk of different cows.

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* This investigation has been carried out in the Bacteriological Laboratories of King's College, London, and of Messrs. Welford and Sons, with the aid of a grant from the Medical Research Committee.

[1] Journal of Hygiene, ix., p. 271; x., p. 56; xi., p. 97; xiii., p. 87 (Bibliography).

[2] New York Experiment Station, Bulletin 380, 1914.

With the object of elucidating the nature of the cells and to revise their classification a large number of trials of various methods of preparing, fixing, and staining films has been made, and it is proposed first to detail the results of this part of the investigation.

Obtaining the Cells.

The cells must be obtained by centrifuging the milk, but it is found that the number of cells thus obtained falls far short of the actual number which deposit after a preliminary treatment of the milk. This preliminary treatment may consist either in warming the milk to 60°–70° C. for 10 minutes or by the addition of a small quantity (0·5 per cent.) of formalin to the milk and allowing the mixture to stand for 24 hours before rotating. The latter was the method adopted in our previous investigations, but the question arises whether some alteration of the cells is not produced thereby. We have made comparative examinations of the cells obtained from milk with and without the addition of formalin, and there is no doubt that even the small quantity of formalin formerly employed does sometimes cause decided contraction of the cells. We have therefore in the following investigation discarded the use of formalin. We find also that a considerable proportion of the cells, and in particular that variety of them which we have provisionally named the "multinucleated," are carried up in the cream-layer, and if the cream-layer be broken up and the milk rotated again, a further yield of cells is obtained; but the process must be repeated three or four times (the breaking up of the cream-layer and subsequent rotation) if even a majority of the cells is to be obtained in the deposit.

Preparation of the Films.

After the deposit of cells has been obtained by centrifuging, they need to be washed so as, so far as possible, to remove the milk and fat admixed with them. The supernatant milk is decanted from the deposit of cells and the fat wiped out of the tube. The cells are then washed. We naturally at first employed physiological salt solution for this purpose, but a study of the results so obtained undoubtedly points to the conclusion that some alteration and distortion of the cells occurs when the film is made and allowed to dry, probably from the concentration of the salt which must inevitably take place as the water evaporates.

As the shape of the cells will be materially affected by the tonicity of the fluid in which they are placed, we were at first inclined to believe that the osmotic pressure of ordinary physiological salt solution was different from that of the milk in which the cells at first find themselves. From the freezing point of milk it may be deduced that its osmotic pressure corresponds to that of a saline solution of 0·9 per cent. concentration. Experiments were therefore made with solutions of sodium chloride of 0·7, 0·8, 0·9, and 1·0 per cent. concentrations, but there appeared to be no appreciable difference in the resulting film. The same distortion or alteration was still noticeable. It was then established that the salt solution in itself had no such influence, as, if the deposit after washing with salt solution was then washed with ox serum (see below) the cells were normal in aspect. It seemed, therefore, that the drying in films was really responsible for the alteration, though it is noteworthy that the tendency is rather towards an expansion of the cell than a contraction, as would be expected in a solution which was rapidly concentrating.

Another modification employed for washing was an alkaline physiological salt solution. Sodium carbonate (Na_2CO_3) was used for this purpose, so that the final alkalinity corresponded to $N/35$ Na_2CO_3 (which is approximately that which obtains in blood serum, according to Wright) and the Na-ion concentration was made approximately equal to 0·9 per cent. NaCl. Other modifications of the wash-liquid were (*a*) solution of egg albumin adjusted by the addition of distilled water to 7·25 per cent. of protein, so as to correspond with the protein content of ox serum; (*b*) egg albumin and sodium chloride, so as to contain 7·25 per cent. of protein and a Na-ion concentration equal to that of 0·9 per cent. solution of sodium chloride; and (*c*) ox serum, both unheated and heated to 56° C. for half an hour. None of these presents any special advantage with the exception of ox serum. We find that washing with heated ox serum gives undoubtedly the best results, causing the least contraction of the cells of any washing agent employed. The aspect of the cells obtained from the same milk, washed in the one case with saline and in the other with ox serum, is entirely different, and the cells would scarcely be recognised as of similar origin. The effect of saline is most marked on nuclear structures.

Preparation of the Films.

The cellular deposit after washing and centrifuging is deposited on a clean slide and spread with a glass rod so as to form a thin even film. This is allowed to dry in the air or by warming to 37° C., and the slide with the dry film upon it is then immersed in a mixture of equal parts of alcohol and ether, to remove the fat, for from half an hour to several hours; it is then ready for staining.

Staining the Film.

A number of different staining methods has been tried, the stains employed being Jenner's stain, Leishman's stain, Pappenheim's stain, Giemsa stain (Revis's method [3]), Giemsa stain (Coles's method [4]), Ehrlich's tri-acid stain, hæmatoxylin and eosin, and the May-Grünwald stain. Of all these, the May-Grünwald stain [5] undoubtedly gives the best results. This is carried out as follows: One tablet of the May-Grünwald stain is dissolved in 100 c.c. of pure methyl alcohol (this solution keeps well). Of this solution, 0·3 c.c. is dropped on the film and allowed to act for one to two minutes, then 0·9 c.c. of specially distilled water is dropped on and is allowed to act for three to six minutes. The film is finally washed in distilled water and dried in the blood-heat incubator. In order to prevent the stain running all over the slide it is useful to make a streak at either end of the film with a soft paraffin mixture composed of vaseline 75 parts and paraffin wax 25 parts, and melted in hot water for use.

We are now trying the method described by Scott for blood films,[6] in which the films are not allowed to dry but are fixed with formalin vapour and the staining is carried out on the wet film, and anticipate that it may give still better results. Undoubtedly the nuclear structure revealed by this method is very different and much more complex than that brought out by the other methods.

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[3] Journal of Hygiene 1910, vol. x., p 83.

[4] See Hewlett's Manual of Bacteriology, fifth edition, 1914, p. 525.

[5] The May-Grünwald stain is made as follows: 100 c.c. of a 1 per cent. solution of eosin are mixed with 100 c.c. of a solution of methylene blue and allowed to stand 24 hours. The precipitate is washed with water and dried and made up into tablets of 0·25 gramme each.

[6] Journal of Pathology and Bacteriology, 1901, vol. vii., p. 133.

A point of importance, and one which perhaps has not received sufficient attention, is that the aspect of the cells differs considerably according to the staining method employed. This applies not only to the cells of milk, but also to the leucocytes of ox blood (which we are also studying) which we have employed to control our methods. The actual tint of the various structures is also markedly affected by the reaction of the fluid used to wash the deposit in, so that films of cells washed in saline showed very different results from those washed in ox serum. It is quite certain that some method of at once hardening the cell wall in order to obviate distortion and disruption is essential to the proper study of these cells. It is not improbable that the cells as they appear in ordinary films are quite different in appearance from that which they really possess. For this reason the method of Scott, though somewhat more difficult of application than ordinary methods, has manifest advantages. The statement commonly made that the cells of milk stain well and naturally with ordinary blood stains is, in our experience, quite erroneous.

Influence of "Keeping" on the Cells.

The cells present in milk may obviously either be "recent" or may have gained access to the milk from the period immediately succeeding the last previous milking. The question arises, Will such a sojourn in the milk alter these cells? It is difficult definitely to answer this question. We know that leucocytes may be kept in physiological salt solution apparently unaltered for many hours, and we find that ox leucocytes added to milk are apparently unaltered after a sojourn of 24 hours at room temperature. Similarly, the cells of milk examined immediately after milking and again examined after the same milk has been kept at room temperature for 24 hours show little or no difference. The probability is therefore that the majority of the cells present in milk undergo little or no alteration during the period the milk remains in the udder.

URINARY CALCULUS IN THE PELVIC PORTION OF THE URETER.

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CASES of calculus impacted in the ureter are of interest from the diagnostic point of view, especially when the stone lies in the right ureter, for in whichever portion it is situated the resemblance of the symptoms to those of appendicitis may easily lead to error. In the present paper I propose to call attention to some points in the differential diagnosis of calculi in the pelvic portion of the ureter and to describe what I consider to be the best route for the removal of such impacted stones.

The three common situations in which calculi become arrested in their descent from kidney to bladder is: (1) At the junction of the renal pelvis and ureter; (2) in the abdominal portion of the ureter, including that part which crosses the brim of the true pelvis; and (3) in the pelvic portion of the ureter. The second is the least common, the first can hardly be distinguished from calculus in the kidney itself, while the third gives rise to symptoms of a most variable nature. It is well known that calculi may remain impacted in the ureter for a considerable time, giving rise to no symptoms when once they have actually come to rest unless the intermittent obstruction which they cause leads to either hydro- or pyo-nephrosis. On the other hand, even stationary calculi may give rise to attacks of pain closely resembling typical renal colic associated with hæmaturia.

Diagnosis.

Most surgeons have knowledge of cases where appendicectomy has been followed by the passage of a urinary calculus per urethram, and of instances of obscure abdominal pain where a similar natural relief of all symptoms has occurred. Such events, whilst satisfactory to the patient, should lead to humility in the surgeon and a determination not to neglect the aid of skiagraphy in doubtful cases. With regard to calculi impacted in the last few inches of the ureter, Thomson Walker[1] states that symptoms of bladder irritation are prominent features, and that there is frequency of micturition with pain along the urethra to the end of the penis; also that genital symptoms may exist, such as painful emissions, hæmospermia, and testicular pain. The patient may complain of pain in the rectum, aggravated by defæcation. Undoubtedly the most constant symptom is pain; abdominal pain, pelvic pain, renal or ureteral colic may be associated with a calculus which has come to rest even in the pelvic portion of the ureter, and the most usual history is of severe attacks of pain in the lumbar region in the past and dull gnawing pain in the lower abdomen in the present history of illness. It is not uncommon for a fixed pelvic calculus to cause pain starting in the loin and extending to the hypogastrium. If definite attacks of pain occur they are usually accompanied by vomiting, sweating, and hæmaturia, but the last symptom is the least constant and may be observed only once or twice even where the attacks are numerous. Rest in bed frequently fails to give immunity against these attacks, as it does in ordinary renal colic. Some fever is apt to be present. As regards urinary symptoms, frequency is the most common, and a careful examination shortly after any acute attack of pain will usually reveal the presence of a trace of albumin and possibly some pus cells; hæmaturia, as already mentioned, occurs in some acute attacks. Tenderness and rigidity on palpation are not uncommon both in the lumbar region and the hypogastrium, even when the stone is impacted close to the bladder. The rigidity, of course, is rarely of the same degree as that found in peritoneal lesions. Hydronephrotic symptoms are comparatively rare, but if they are present they dominate the clinical picture, and before operation the actual cause of such hydronephrosis may not be suspected. The ultimate diagnosis usually rests with the result of X ray examination although it may be possible in children to palpate a calculus in the pelvic portion of the ureter by rectal examination, or by the vagina in the female. When the stone lies impacted in the ureter behind the bladder wall cystoscopic examination is usually negative as regards the appearance of the ureteric orifices, but the passage of a ureteric bougie may be arrested, and this observation combined with skiagraphy is most useful in proving the presence of a calculus and the fact that it lies in the course of the ureter. The necessity for such catheterisation of the ureters exists in cases where shadows of an uncertain character are seen on the skiagraphic plate, and the most frequent sources of error are fæcal matter, calcified glands, and phleboliths; the last named most frequently give rise to doubt because they are quite common in the pelvis and not infrequently lie about the line of the ureter, and in size they may correspond to such an impacted calculus. Apart from the need for combined catheterisation of the ureter and skiagraphy it should be borne in mind that calculi are usually elongated or bean-shaped, and nearly always present one pointed extremity, due to the wearing away of the lower end of the calculus in most cases, whereas phleboliths are spherical, and I think I am right in saying they are never shaped like a bean with one pointed extremity.

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[1] Choyce's System of Surgery, 1912.

The reports on the skiagrams of three cases recently under my care may be of interest. They were all taken by Mr. A. D. Reid, radiographer to St. Thomas's Hospital, and his reports were as follows:—

CASE 1.—Male, aged 36 years. Two years' history. "Shadow present. Probably calculus in lower end of right ureter."

CASE 2.—Female, aged 24 years. Six weeks' history of recurrent pain. A calculus had been removed previously from the left ureter. "Kidney region *nil.* Shadow of calculus in lower end of the ureter, or possibly a phlebolith." Both a phlebolith and a calculus were found at operation.

CASE 3.—Male, aged 9 years. Two and a half years' history. "Shadow in upper part of bladder region. Probably calculus incarcerated in bladder wall." In this case the calculus had been felt on digital examination of the rectum by my colleague, Dr. C. R. Box.

In these cases a more or less accurate diagnosis was made, but required X ray examination to confirm it. In the first case the calculus was thought to be renal in position, in the last the possibility of appendicitis was very strong; in the second case it appeared clear that there was a local recurrence. The first case illustrates the importance of skiagraphy applied to the whole urinary tract in cases of suspected calculus.

Operative Treatment.

In those cases where palliative measures fail and there is no sign of the calculus descending to the bladder, when it may be crushed by the surgeon or passed by the patient, it is important not to delay operation lest gross changes take place in the kidney as the result of back pressure. In all these cases I operated by a suprapubic route, which I have since seen advocated by Judd.[2] It appears to me to be much the best method of reaching the pelvic portion of the ureter, and it has the great advantage of being almost a bloodless operation. The details are as follows. The bladder being distended with fluid and the table elevated so that the patient is placed in a moderately high Trendelenburg position, the usual median incision is made as for suprapubic cystotomy. As soon as the vascular outer coat of the bladder is thoroughly exposed the knife is laid aside and with a gauze pad the peritoneum is swept away from the upper and back part of the bladder. Two silk guides are then passed through the muscular coats of the bladder, which should be emptied of its fluid. The line of cleavage can then be followed by pulling the bladder up towards the lower angle of the wound and pushing the cellular subperitoneal tissue towards the diaphragm; in this way the ureter of either side can easily be found covered by only a small amount of connective tissue, and if a calculus be present and the ureter dilated above this it may be exposed in a few minutes. Some radicles of the vesical veins will be exposed, but in my experience it is rarely necessary to tie any blood-vessels. When the ureter has been identified by its position, its course, and by the presence of a calculus within it the simplest plan is to pass a couple of catgut stitches through its outer coats and pull it up towards the surface of the wound, but it is not desirable to bare any considerable length of ureter, nor is it necessary to do so. A small slit in the dilated ureter will enable quite a large calculus to be removed with narrow-bladed forceps, and the incision can then be closed by fine catgut at right angles to the long axis of the ureter. Some surgeons advise that such ureteric wounds should not be sutured, but I have found it quite easy to do and have had no trouble with leakage after operation, although I have always taken the precaution of draining the wound down to the ureter with a rubber tube. This can be withdrawn by degrees after 48 hours if the wound remains clean. In my cases the wounds were all healed at the end of a fortnight, and I am advising this route for operation on the pelvic portion of the ureter because it is simple, easy, and rapid. It is not mentioned in those special books on this subject which I have had an opportunity of consulting, and I am convinced that it ought to be regarded as the most suitable route for a calculus impacted in the pelvic portion of the ureter.

Devonshire-place, W.

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[2] E. S. Judd: Annals of Surgery, 1914, lix., 393, "A Method of Exposing the Lower End of the Ureter."

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

ELECTRO-THERAPEUTICAL SECTION.

The late Dr. Lewis Jones.—The Standard Meal for X Ray Examinations.—Electrical Treatment of Stasis.—Glycosuria in Chronic Intestinal Stasis.—Simple Peptic Ulcer of Œsophagus treated by Ionisation.—Exhibition of Skiagrams.

A MEETING of this section was held on April 16th, Dr. IRONSIDE BRUCE, the President, being in the chair.

Dr. REGINALD MORTON alluded, in sympathetic terms, to the recent death of Dr. Lewis Jones, a loss which, he said, the section would not be able to make good, for Dr. Jones was truly the father of electro-therapeutics in the British Empire. The specialty began its upward trend when the deceased took charge of the electrical department of St. Bartholomew's Hospital in 1889—a fact largely attributable to his scientific methods, his thoroughness, and his accuracy. In the earlier days, when scorn was encountered, Dr. Jones never lost his good spirits or sought to retaliate, for he had a robust belief in its future, which had since been fully justified. He had suffered greatly from the loss of his son, who went down on H.M.S. *Hawke*, and that calamity he had never recovered from. Though a reticent man, Dr. Jones was very kindly, and one of the best features in his strenuous life was the encouragement he was always ready to give to younger aspirants in radiology. For himself (Dr. Morton) he had done many kindnesses, both scientific and in matters more mundane. It was, indeed, only those whose privilege it had been to know Dr. Jones intimately who could appreciate how great was the loss due to his death. Dr. Morton moved:—

> That this meeting wishes to express its deep sense of loss by the death of Dr. Lewis Jones, and its appreciation of all it owes to his work and personal influence, and desires to convey to Mrs. Lewis Jones an expression of its sympathy.

—Dr. E. P. CUMBERBATCH, in seconding the motion, said that he had only known Dr. Lewis Jones since 1911, but he soon discovered that he was a skilled physicist and an able physician. Ever since he had been associated with that gentleman he had found him a kindly light leading him through the gloom.—The motion was adopted by members rising in their places.

Dr. **REGINALD MORTON** read the report of the subcommittee of the section on a Standard Opaque Meal for Radiographic Examination of the Alimentary Canal. The subcommittee consisted of Dr. A. E. Barclay, Dr. A. F. Hertz, Dr. Reginald Morton, Dr. A. C. Jordan, and Mr. S. Gilbert Scott. Dr. Jordan did not subscribe to the main report, but submitted the separate report mentioned later. The report consisted of five heads: (1) The standard meal can consist of either bread-and-milk or porridge; (2) the total bulk of the meal should be about half a pint; (3) the meal should be mixed with two to three ounces of barium sulphate or bismuth oxychloride; (4) it should be taken when the stomach is as empty as possible; and (5) no aperient or other medicine should be taken within 36 hours of the first examination, and if the bowels are not opened naturally an enema should be given on the morning of the examination. Concerning the preparation of the bread-and milk, 2 oz. of white bread, devoid of crust, should be cut into small cubes; 8 oz. of ordinary or malted milk are boiled in a separate vessel with 2 oz. of bismuth oxychloride or barium sulphate; this is stirred and poured over the bread, sugar being added to taste. If porridge be chosen, 7 oz. of it are mixed with 2 oz. of bismuth oxychloride or barium sulphate and milk to bring the total to 10 oz., sugar to taste being added. The following useful notes were appended. Bismuth carbonate neutralises about 22 per cent. of the free acids of the stomach, but there is no evolvement of gas, as the carbon dioxide is dissolved as rapidly as it is produced (H. Finnemore and A. E. Barclay). The reduction of the acidity of the gastric contents tends to reduce the motor activity of the stomach and to interfere with the normal action of the pylorus. Bismuth oxychloride is slightly more opaque to X rays than is bismuth carbonate (Reginald Morton). Bismuth oxychloride is about one and a half times as opaque to the X rays as an equal bulk and twice as opaque as an equal weight of barium sulphate (Reginald Morton). Dr. Jordan's report stated that in his opinion the standard meal described was not suitable for the investigation of chronic intestinal stasis, and for this he recommended an emulsion containing 4 oz. of carbonate of bismuth with sugar of milk and water, two hours after an ordinary breakfast, without purge or enema.—Dr. **HERTZ** thought a note should be added to the effect that barium sulphate was a preferable salt for hospital purposes because, while the radiographic effect was equal to that of bismuth oxychloride, it was very much cheaper. Guy's Hospital had saved about £50 a year by the substitution.—Dr. J. **METCALFE** discussed the question of making the meal more palatable by the addition of substances like chocolate, especially considering that such people had some abnormality of the digestive apparatus, and a repugnant meal might modify the functional result.—Dr. **JORDAN** thought a difficulty in the matter of flavouring was that tastes differed so widely, and one would have to learn the personal predilection beforehand. With regard to his minority report, a person with intestinal stasis could more easily take an emulsion than a solid meal, and the emulsion would render opaque the food already in the stomach. Persons should come for their meal as hungry as possible.—The **PRESIDENT** expressed the hope that the members would all adopt the standard now submitted, especially as it would greatly help a reliable comparison of results. He supported the suggestion that a note should be added concerning the cheapness of barium sulphate.—Dr. **MORTON**, in reply, said it was intended to allow a free hand in regard to added flavouring; the aim should be to give a meal which should be as little objectionable as possible. He was in favour of adopting barium sulphate universally instead of bismuth oxychloride. This was agreed to.

Dr. F. **HERNAMAN-JOHNSON** drew attention to the Alternative Treatment of Stasis by Electrical Rhythmic Stimulation of Abdominal Muscles, such as by the sinusoidal current, rhythmically interrupted. This could be done in conjunction with a mechanical support and the use of cascara or paraffin for the first day or two.—Dr. **BARCLAY** expressed his agreement with Dr. Hernaman-Johnson's remarks.—Dr. **MORTON** also bore testimony to the value of the slow sinusoidal current, with about one alternation per second.—Dr. T. J. **BOKENHAM** expressed similar views.—Dr. **JORDAN** remarked that operation should only be done when other means had failed, and those who found other ways of dealing with intestinal stasis benefited not only patients but the profession.

Dr. **JORDAN** read a paper on Glycosuria in Chronic Intestinal Stasis. In the experimental methods of producing glycosuria three facts stood out prominently: (1) Claude Bernard's "diabetic puncture" of the floor of the fourth ventricle of the brain; (2) the administration of certain drugs, especially phloridzin; and (3) extirpation of the pancreas. The last of these threw by far the most light on the etiology and pathology of diabetes mellitus, though so far there was still no specific cure for the disease. But the knowledge of the relation of the pancreas to persistent glycosuria was leading to important pathological and therapeutic results. The pancreas was not at fault in every case of diabetes, though it was found to be diseased in 75 per cent. of the cases examined post mortem. Nor was pancreatic disease always accompanied by glycosuria. If all but one-fourth of the pancreas were extirpated there was no glycosuria. With regard to the pancreatic function in relation to chronic intestinal stasis the undue retention of intestinal contents in the lower coils of the ileum led to their invasion by microbes from the cæcum, and as these coils were almost sterile in health they could not deal with large doses of bacterial toxins, hence there was set up a general toxæmia. These overloaded coils constantly pulled upon the mesentery when the person was in the upright posture; a thickening might form at the point of greatest tension, the commencement of Lane's "ileal kink." Instead of that, however, in a feeble patient the mesentery yielded, and its attachment to the posterior surface of the abdomen slipped down, and a kink was produced at the duodenojejunal junction, and behind this kink the duodenum was distended. This and the exaggerated duodenal peristalsis were apparent with X rays. The congested duodenum was later invaded by bacteria, probably resulting in ulceration, or infection of the gall-bladder *viâ* the common bile-duct. One of the results of the succeeding general toxæmia was, in women, a mastitis of nodular form, which later proceeded to chronic cystic disease, and might eventually become cancerous. Chronic pancreatitis was another sequel; and both cleared up with the relief of the stasis. Most subjects of glycosuria suffered from chronic intestinal stasis. The urine contained indican, xanthin bases, and tyrosin; and one of the first indications in glycosuria was to relieve the chronic constipation. Transitory glycosuria was also often present in subjects of rheumatoid arthritis and in dyspeptics. Dr. Jordan concluded by mentioning cases in illustration of his thesis, and showed an instructive series of skiagrams.

Dr. **BARCLAY** described a case of Simple Peptic Ulcer of the Œsophagus and its Treatment by Ionisation.

Dr. **HERTZ** exhibited skiagrams illustrative of the following conditions: Achalasia of the Cardia, Syphilis of the Stomach, Appendicitis with Undescended Cæcum, Appendicitis with Colon situated entirely on the Left Side of the Abdomen, Heart pushed over to the Right Side of the Chest by Splenic Flexure, Hirschsprung's Disease in an Adult without Symptoms, tracings showing result of treatment of Atonic Dilatation of the Stomach, and tracings showing results of treatment in Severe Intestinal Stasis and Coloptosis.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held at the West London Hospital on April 9th, Dr. F. S. Palmer, past President, being in the chair.—Dr. Palmer showed: 1. A case of Progressive Muscular Atrophy, spinal type, in a male aged 39 years. 2. A case of Mongolism after eight years' treatment with thyroid extract and calcium salts, showing much improvement mentally and physically.—Mr. W. McAdam Eccles showed a case of a Bullet in the Heart Muscle, the patient being at the present time little the worse for its presence. It was demonstrated to the members present by Dr. Reginald Morton in the X ray department. The object was plainly seen, moving with the heart, just above the diaphragm and slightly to the right of the middle line. The patient was wounded on Nov. 4th last, the bullet striking him on the left shoulder. He walked a mile and a half to the hospital in Ypres, where first aid was given, and within less than 48 hours from the time he was wounded he was lying in St. Bartholomew's Hospital, his condition by that time being somewhat critical. The general opinion of the members was that the bullet was in the right heart close to the septum.—Dr. George Pernet showed a case of late Congenital Scrofulo-syphilide.—Dr. J. M. Bernstein showed a single woman, aged 26, who for four months had suffered from Spastic Paraplegia affecting both lower extremities.—Dr. Reginald Morton showed skiagrams of two cases of Œsophageal Pouch, two cases of Malignant Stricture of the Œsophagus, and a series of radiographs, taken at hourly intervals, from a case of Organic Hour-glass Stomach.—Mr. H. S. Souttar showed: 1. A case of Injury to the Circumflex Nerve resulting in Complete Paralysis of the Deltoid. Ultimately the distal end was anastomosed with the posterior cord of the brachial plexus. The muscle has recovered. 2. A child, aged 11 months, who had swallowed an open safety-pin 1 in. long, which had remained stationary in the duodenum for five days. It was removed by pushing the point through the wall and making a minute incision for the passage of the head.—Mr. O. L. Addison exhibited a case of Fracture of both Patellæ after 25 years. Skiagrams showed that the union was obviously fibrous and had been treated without operation. The patient suffered no inconvenience at the present time.—Dr. Arthur Saunders showed cases of Pulmonary Tuberculosis, and one case of Bilateral Thickening of the Tibial Periosteum.—Dr. Sydney A. Owen showed a case of (?) Toxæmic Jaundice with Hepatic and Splenic Enlargement.—Dr. Palmer, in opening the discussion, referred to the continued and regrettable illness of the President, Mr. Aslett Baldwin, and said there was every hope that he would be able to be present at the proposed reception on April 23rd. General support of all members and their friends was asked for, because after paying expenses the proceeds would be handed over for the benefit of the Belgian doctors and pharmacists whose country and homes had been devastated. Referring to Dr. Bernstein's case, he considered it one of disseminated sclerosis. He also referred to Mr. Addison's case of fracture of both patellæ.—Mr. McAdam Eccles made some interesting observations on the general question of fractures of the patella, including methods of treatment and some of the difficulties in the way of securing bony union.—Dr. Owen's case was discussed by Dr. Saunders.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held at the Metropolitan Hospital on April 9th, Dr. David Ross, a past President, being in the chair.—Dr. Ross showed: 1. A man, aged 40 years, suffering from Ectopia Vesicæ. He was wearing a portable urinal and had found no difficulty in carrying on his occupation. 2. A man, aged 40, who complained of a woolly feeling of the calf, accompanied by swelling of the right knee. Diagnosis, arthritis due to septic mouth.—Mr. J. J. Udale showed a youth, aged 19 years, suffering from Parenchymatous Goitre, who had never resided out of London.—Dr. Sidney Foreacre showed a specimen of a Trachea and Œsophagus in which a new growth—epithelioma—occurred in the œsophagus at the junction of œsophagus with trachea. The growth infiltrated the trachea and thyroid gland, and pressure on the recurrent laryngeal nerves caused loss of voice. Tracheotomy was performed without avail.—Dr. Leslie Durno read notes of a case of Herpes following the distribution of the middle branch of the left fifth nerve—viz., the lower eyelid, cheek, anterior temporal region, side of nose, upper lip, half upper jaw, upper part of pharynx, left side of soft palate, and half of the uvula. Pain was present for ten days before the appearance of rash.—Mr. W. S. Soden showed a "Plaster-of-Paris" Kidney from a woman, aged 71, who was brought to the hospital dead, the cause of death being dissecting aneurysm of the descending aorta. The condition was probably tuberculous going on to total calcareous degeneration.—Mr. J. J. McNaboe showed: 1. A man, aged 38, suffering from Glosso-labio-laryngeal Paralysis with right hemiplegia of six years' standing. The overflow of saliva commenced three years ago. There was a double aortic murmur and the hemiplegia commenced suddenly. 2. A girl, aged 14 years, with psoriasis guttata on the knees and elbows and psoriasis punctata all over the body, back and front. She had improved since last seen 28 days ago, although not under treatment. 3. A woman, aged 32, with Graves's disease, accompanied by a visibly pulsating right lobe of thyroid. A question arose in this case whether the pulsation was in the thyroid or was conducted to it from a dilated arch of the aorta.

Reviews and Notices of Books.

An Introduction to the Study of Colour Vision.

By J. H. PARSONS, D.Sc. Lond., F.R.C.S. Eng. Cambridge: University Press. Pp. viii.–308. Price 12*s.* 6*d.* net.

THE vast literature of colour vision consists almost entirely of papers written in support of some particular theory. It is therefore with unusual pleasure that we welcome this excellent all-round résumé of the subject.

The book is divided into three parts: Part I., the chief facts of colour vision; Part II., the chief facts of colour blindness; and Part III., the chief theories of colour vision. The subject dealt with is so extensive that it is difficult to make a selection of those parts upon which comment would be of most interest. One of the most striking facts is described on p. 53, where we learn how similar the condition of dark adaptation is to colour blindness. When the eye has been kept in the dark for 20 minutes or so the condition of scotopia or twilight vision is induced, in which the sensibility of the retina for low degrees of illumination is enormously increased. Scotopic vision depends apparently "upon low stimulus values and a comparatively high degree of dark adaptation" (p. 57), and presumably these two processes are subserved by independent physiological mechanisms. When the scotopic eye is subjected to the various coloured lights of the spectrum, if they are of very low intensity, a greyish band is seen with its brightest part in the neighbourhood of the E line (530 $\mu\mu$), instead of near the D line (580 $\mu\mu$), as in the normal photopic eye. Now it is found that the luminosity curve of all colour-blind persons shows exactly the same characteristic. Further, the curve of values for bleaching visual purple is extraordinarily similar to the above curves, so that we are driven to regard the fact as of the greatest significance in any theory of colour vision. A warning may be given against a hasty conclusion from the statement that "accurate matches can be made between any two parts of the spectrum by merely modifying the intensity of one light." It is well known how difficult it is to compare the luminosity of two different coloured lights, as they give rise to quite different impressions. The statement quoted only refers to the scotopic eye, and gives no help in comparing two bright lights of different colours as seen by the normal or photopic eye; indeed, as we have seen, the appreciation of illumination is quite different in the two eyes. It is interesting to find that Mr. Parsons quotes evidence in support of the readings of the flicker photometer for lights of a different colour; they are, indeed, confirmed by Ives's results with the same instrument. He says that in the bright prismatic spectrum the red light (670 $\mu\mu$) appears about ten times as bright as the blue (480 $\mu\mu$). On the other hand, the achromatic scotopic value of the red is less than one-sixteenth that of the blue. Hence with failing light the reds appear almost black and the blues relatively bright. This is known as Purkinje's phenomenon, and clearly it depends upon the peculiarity of the scotopic eye.

Under the heading Recurrent Vision (pp. 85–100) are given accounts of the phenomenon of several images recurring at longer and longer intervals after the exposure of a scotopic eye to a momentary flash of light, and also of the sensations produced by intermittent flashes of light, flicker phenomena, &c. Porter's experiments on Talbot's law are given in considerable detail, but we have looked in vain for the observations of Stewart on the same subject.[1] In the next edition we should like to see some notice taken of Stewart's interesting curves, and a detailed account of the Benham's top phenomena. These are most important in their bearing on the tenability of any colour-vision hypothesis. In the present state of our knowledge no theory that has been advanced will account for all the facts of colour vision. The duplicity theory states that achromatic scotopic vision is carried out through the mediation of the rods alone, and that the perception of colour is dependent on the presence of the cones. It is well known that the rods are absent in the foveal area, and that in the peripheral parts of the retina rods become more abundant and cones fewer, just as the perception of colour diminishes towards the periphery of the field. Again, it has been shown that three whites of equal value to the normal eye, made by mixtures of red and blue-green, yellow and blue, green-yellow and violet, darken unequally with diminishing intensity. The photopic values of the mixtures are cone values, at lower intensities rod and cone values are mixed, and at the lowest only rod values persist. The Young-Helmholtz theory is the simplest way of accounting for the trichromatism of colour vision—i.e., that every known colour can be represented by a mixture of red, green, violet, and black sensations, as is well known by every one familiar with the three-colour process in art reproduction. Hering's theory postulates three pairs of primary colour sensations. This would explain nearly all the phenomena of after images and contrast effects, but it fails to give a reasonable explanation of the luminosity curves of the spectrum with the photopic and the scotopic eye; it is objectionable also in that it provides twice as many variables as the results of colour mixture demand.

We make no attempt to deal in a review with the seven other theories that the author describes. We can only refer our readers to this storehouse of information. The bibliography provided is excellent and has only a few trifling omissions, and throughout Mr. Parsons treats his subject with a scientific feeling that is admirable.

Lyon's Medical Jurisprudence for India, with Illustrative Cases.

By L. A. WADDELL, C.B., C.I.E., LL.D., M.B. Glasg., Lieutenant-Colonel, I.M.S. (Retired); Examiner in Medical Jurisprudence, Calcutta University. Fifth edition. Calcutta and Simla: Thacker, Spink, and Co. 1914. Pp. 867. Price 28*s*.

THIS work is offered as a complete exposition of the Indian medical jurisprudence of to-day, and the fact that a fifth edition has been called for shows that it has met with success. Not only is it a good manual on forensic medicine and toxicology in general, but it is rendered still more interesting by a description of the procedure in Indian law courts and of the peculiar circumstances under which the more common crimes come to be perpetrated in India and of the devices ordinarily taken to conceal crime in that country.

The detection of crime and the conviction of criminals in India are often rendered very difficult owing to special circumstances, such as the rapidity with which decomposition destroys dead bodies in the hot climate, and the facilities for concealing and destroying dead bodies, together with the general practice of rapid cremation or burial a few hours after death. Further, insufficient particulars of crime are of frequent occurrence in the police reports accompanying the alleged assaulted person or a decomposed dead body. Also, the untrustworthiness of native evidence is notorious. In nearly every case in law more or less false evidence is given, whether it be from fear, stupidity, apathy, malice, or innate deceit. The constant difficulty, therefore, is to sift the truth from the falsehood. A very common form of conspiracy is to cause a person to disappear and then to charge with murder some person against whom a spite is cherished. A plausible explanation is given of the disappearance of the body of the alleged murdered person, or a putrid corpse is obtained from the adjoining river, and after gashing it in several places it is brought forward as the remains of the missing individual. In such conspiracies circumstantial details are not infrequently sworn to by several persons, testifying as eye-witnesses to alleged facts of the murder, to the burial of the corpse, &c., so that conviction for the murder may be duly passed, and the falsity of the whole proceedings not be discovered until the reappearance alive of the person alleged to have been murdered. It has also to be remembered that a good deal of the crime against the person in India is the result of the primitive social state of the mass of the people and the observance of semi-barbarous cults and traditions handed down from the past, and often based upon primitive tribal instincts of self-preservation, but which now, under British rule, are illegal and criminal.

In this new edition the book has been thoroughly revised throughout and in great part rewritten to bring it fully up to date. An interesting new feature is the special chapter upon the Bio-chemical Test for Human Blood-stains, contributed by Lieutenant-Colonel W. D. Sutherland, of the Indian Medical Service. The process is described in its practical aspects. The great climatic difficulties hitherto experienced in carrying out this test successfully in India have now been effectively overcome. The vast number of illustrative cases which are quoted adds considerably to the interest of the work, and the extensive introduction of a new fount of clear heavy type for the headings and subheadings, and a fuller index, greatly facilitate reference. The text-book will be found useful not only by civil surgeons and medical students, but also by magistrates, police officers, and solicitors and barristers throughout India.

The Intervertebral Foramen: an Atlas and Histologic Description of an Intervertebral Foramen and its Adjacent Parts.

By HAROLD SWANBERG. With an Introductory Note by Professor HARRIS E. SANTEE. Illustrated by 16 full-page plates, none of which have ever before appeared in print. Chicago: Scientific Press. 1914. Pp. 101. Price $3.00.

Mr. Swanberg has taken a very limited subject for his study, and it stands to the credit of his ingenuity that he has managed to make a book out of it. The animal selected for his investigation is the "house cat"; but though we agree with the author as to its suitability from the point of view of size, we find it more difficult to approve of his further contention that "this animal and the human are very similar from a histologic and an anatomical standpoint."

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[1] Proceedings of the Royal Society of Edinburgh, 1888.

It seems a pity that in making so concentrated an effort the author did not aim at better style of writing. In so small a compass there should be but little evidence of careless composition. Yet some passages detract seriously from the workmanship of the finished product—"How similar these bones are with those in the cat" and "There is a very small amount (of cartilage) on the articular processes, but considerable on the bodies," are examples. Throughout the book "ligamentum denticulata" and "ligamentum flava" are freely used. It may well be that this peculiarity of style has had its influence upon the opinion we have formed of the book; but we must own to the impression that, although a very small point has been studied, little has been made of it.

The Principles of Hygiene.

By D. H. Bergey, A.M., M.D., First Assistant, Laboratory of Hygiene, and Assistant Professor of Bacteriology, University of Pennsylvania. Illustrated. Fifth edition. London and Philadelphia: W. B. Saunders Company. 1914. Pp. 531. Price 13*s.* net.

A practical text-book that has reached its fifth edition has justified its existence and shown that it meets the requirements of a considerable body of students and practitioners of the subject to which it relates. In the present volume the whole sphere of hygiene, with its special departments connected with schools, the army, and the navy, is dealt with; and as the volume is handsomely printed in large type the 500 pages do not allow of much discussion in detail. It is accordingly, as its title indicates, an introduction to the study of the principles of the subject rather than a work to turn to for reference in practical difficulties.

The first chapters deal with air and ventilation; here it is said that expired air is "nearly always saturated with aqueous vapour": this should read, "always nearly saturated." The statement as to the effects of air vitiated by combustion is also obscure owing to careless punctuation. An unfortunate misprint on p. 73 in the formula for estimating the velocity of falling bodies, where $2\,gr$ is substituted for $2\,gs$, will perplex the student in a matter already somewhat difficult for the ordinary non-mathematical mind. Heating is next considered shortly in ten pages. The use of the term "indirect radiation" for what is generally known as convection in relation to systems of heating does not tend to clearness. Water and its supply and purification are next dealt with. The researches of McCarrison as to causation of goitre should have been referred to. A few pages only are given to sewage removal, and but little is said as to the construction of closets, soil pipes, and drains. It is rightly laid down that the soil pipe should be ventilated and disconnected from the drain, but the trap shown in Fig. 41 is an exceedingly bad one, and would undoubtedly lead to blockage in the drain. It has almost every fault that a trap can possess. Very little is said about the treatment of sewage, which is disappointing in view of the large amount of experimental work that has been carried out in the United States. Food, exercise, and clothing are then discussed briefly in Chapters VII. to IX.

Alcohol is considered by the author to be a food, but "the use of alcoholic beverages is to be condemned except under special conditions in disease where such a stimulant is required." Somewhat more attention might have been given to this subject. In dealing with clothing, the straw hat with broad brim is considered to be the most serviceable for inhibiting direct radiation of heat from the sun. No mention is made of the helmet, which (properly ventilated) is incomparably superior. The causation of disease is adequately dealt with, and full treatment is given to the subjects of disease prevention and disinfection in a very interesting book which forms a good general guide to a subject which has now become very far-reaching, and whose different branches require special study.

The Century of Columbus.

By James J. Walsh, M.D. New York: Catholic Summer School Press. 1914. Pp. 577. Price $3.50.

Dr. Walsh shares with many of us the opinion (or the fallacy, whichever it may be called) that "the old is better." This opinion is in itself old and was held up to reprobation by Tacitus through the mouth of his character, Marcus Aper, in the typically Tacitean sentence, "vitio autem malignitatis humanæ vetera semper in laude, presentia in fastidio esse." In a former volume Dr. Walsh held up the thirteenth century as the greatest of centuries, and it undoubtedly has high claims to this distinction; in the present volume he lauds another period, namely, 1450–1550, as being "among the greatest periods of human accomplishment in the world's history," and again we may say that he is right in the main. The Renaissance was a time when men were great in both good and evil. There were men like Colet, More, and Linacre, and men like Henry VIII., Thomas Cromwell, and Protector Somerset; there were Popes like Julius II. and like Alexander VI.; there were great artists who were good men like Michael Angelo, and great artists who were bad men like Cellini.

Dr. Walsh discourses pleasantly enough upon the Renaissance under three aspects, the Book of the Arts, the Book of the Deeds, and the Book of the Words. We learn that Raphael "by universal consent, was the greatest painter that ever lived," but that was a matter of opinion, and to-day opinion, while adjudging him the prince of decorators, would be found, upon intellectual grounds, to give pride of place elsewhere. Nor can we agree that Palestrina was, though undoubtedly the greatest musician of the period under review, "probably indeed the greatest of all times," although in his own line he is certainly incomparable. Again, on p. 434, Dr. Walsh, in speaking of the "De Imitatione Christi," says: "The Revd. Dr. Liddon, the great Greek lexicographer, called it 'the very choicest of devotional works ....'" This quotation may be from Liddell or Liddon, but the former was the Greek lexicographer, and not the latter. But whether we always agree with Dr. Walsh or not, he has given us a most interesting book, and the chapters on medicine and surgery are a useful résumé for the medical historian of the two arts during the period.

Town Planning, with Special Reference to the Birmingham Schemes.

By George Cadbury, jun. London: Longmans, Green, and Co. 1915. Pp. 201. Price 7*s.* 6*d.* net.

This very practical and useful book is of special interest to the medical profession as showing how intimately town planning is bound up with public health and social welfare. Mr. Cadbury appropriately quotes Charles Dickens as saying: "I have expressed again and again the conviction founded upon observation that the reform of the people's habitations must precede all other reforms, and that without it all other reforms must fail." The way in which all schemes of housing reform depend upon town planning is here clearly indicated, and the essential features of any town-planning scheme are said to be the following: (1) Limitation of the number of houses to the acre; (2) every house should be within reasonable distance of some open space; (3) careful planning of main roads, which should be wide enough to leave a separate track for tramways and should be connected up with a ring road, thus enabling heavy traffic to pass round the town instead of through it; (4) a belt of agricultural or park land should surround the town so as to prevent it sprawling out in the present formless, hideous fashion so characteristic of most growing English towns; (5) factory sites should be grouped together close to a railway siding, as this offers great advantages to manufacturers while preserving the amenities of the town; and (6) the whole scheme should be under the control of some responsible body which can treat the land as a whole and so harmonise conflicting interests.

These desiderata are, of course, rather in the nature of counsels of perfection, and can be obtained in their entirety only when a town is being built *de novo*, such as the Garden City at Letchworth. To this Mr. Cadbury very justly makes frequent reference; thus he points out that the death-rate there, with a population of 8000, partly residential and partly industrial, is only 6·1 per 1000. It is easy to exaggerate the effect of surroundings upon character, but Mr. Cadbury is in agreement with most social workers in supposing that the improved conditions of city life thus introduced will have an important effect in diminishing the amount of crime.

So far two schemes, both emanating from Birmingham, have received the sanction of the Local Government Board, and there are other schemes in preparation. These Birmingham schemes are described with great detail and with numerous excellent illustrations, and the particulars of one of them are given very fully in an appendix. Mr. Cadbury fully explains the various steps which have to be taken to conform with legislation by a local authority, and points out various reforms which would reduce the expense and simplify the method of inaugurating new schemes. He maintains that legislation for town-planning cannot be completely successful until the local authority itself owns the land. Some striking instances of the great expense involved in removing slum areas are given from Sheffield, Liverpool, and London.

Town planning takes into account the needs and possibilities of all classes of the community, and, as Mr. Cadbury well says, "it is not only the work of the architect and surveyor, but also of the business man, estate agent, and man of imagination." The book is well got up, with very good illustrations, and will be a most helpful guide not only to members of town councils, but to all who are interested in social reform.

LIBRARY TABLE.

Methods of Quantitative Organic Analysis. By P. C. R. KINGSCOTT, D.I.C., A.R.C.Sc., A.I.C., B.Sc. Lond., and R. S. G. KNIGHT, D.I.C., A.R.C.Sc., A.I.C., B.Sc. Lond. With diagrams. London: Longmans, Green, and Co. 1914. Pp. 283. Price 6*s.* 6*d.* net.—Quantitative organic analysis is admittedly more difficult of application than quantitative inorganic analysis, if only for one reason, that in the former case there are few ionic reactions, while in the latter they are the rule. Nevertheless, as these authors show, there are many schemes available for the quantitative analysis of organic compounds which give accurate results if pursued with care. The most useful section of this book, we think, is that on the analysis of organic compounds of technical importance, which include starches and sugars, indigo, oils, fats and waxes, alkaloids, alcohols, glycerine, phenol, acetone, chloral, and other definite bodies. The preceding chapters deal with ultimate analysis and the estimation of typical groups so commonly employed in research work and when theoretical considerations are in view. The book will prove a valuable help in the laboratory, where organic operations are not so widely followed, perhaps, as are similar inorganic operations, although the former are of quite equal importance. The instructions given are very clear, and indicate the joint authors' practical acquaintance with their subject.

English Medical Women. By A. H. BENNETT. London: Sir Isaac Pitman and Sons. 1915. Pp. 158. Price 3*s.* 6*d.* net.—Miss Bennett has written a pleasant and unpretentious little book about medical women, to which Mr. Stephen Paget contributes a kindly preface. There is nothing new in the book, but it will interest many of those who are not aware of the part played by women to-day in the profession of medicine. And medical women are by no means so novel as many people think. Besides those mentioned by Miss Bennett, we may mention the traditional medical work of Thecla in the primitive church, and in the eleventh century there were a number of medical women at Salerno, the mulieres Salernitanae, who were most successful practitioners. Miss Bennett describes with sympathy the struggles of Miss Garrett, as she then was, and of other pioneer women to obtain medical qualifications, beginning about the middle of the last century; this subject with other historical notes takes up the first part of the book. The second part is devoted to accounts of women's hospitals—i.e., hospitals worked by women, together with an account of the work being done at the seat of war by the Women's Hospital Corps. The next chapter gives an account, and a very thrilling one, of the work of the corps in Antwerp during the siege. Miss Bennett, a lay woman, has written a good book, but we would remind her that courtesy and kindliness to patients are not confined to hospitals worked by women, as she seems to imply on pp. 83 and 84.

The Report on Odontomes by the Committee appointed by the British Dental Association. With 94 illustrations. Published by the British Dental Association. Pp. 133. Price 6*s.*—At the annual meeting of the British Dental Association held in London in 1906 a collection of odontomes was exhibited, the specimens being lent by the various museums and private individuals. The scientific value of the collection was realised by the executive of the Association, and the preparation of an extended and illustrated account of the specimens was arranged for. The work was placed in the able hands of Mr. D. P. Gabell, Mr. W. W. James, and Mr. J. Lewin Payne, and they have the satisfaction of having produced the most valuable account of odontomes we are acquainted with. A careful search has been made for the records of cases of odontomes, and these have been collated and brought under different headings. This extended investigation has induced the editors to widen the scope of the term odontome, and they have included dental cysts, enamel nodules, and many specimens which resemble cases of gemination. A new classification has been suggested, the specimens being classed under three main headings—viz., epithelial, composite, and connective-tissue odontomes, each of these groups being again subdivided. An idea of the manner in which the subject is treated can be gleaned by taking as an example dentigerous cysts. First, there is a general account of the pathology and clinical features, then follows a summary of cases the records of which have been traced, 91 in number; this is followed by a full account, with illustrations, of the specimens shown at the meeting; and finally there is a bibliography. The editors have produced a work of considerable scientific value.

JOURNALS.

British Journal of Inebriety.—The April number contains an important article by Mr. F. S. D. Hogg, resident medical superintendent of the Dalrymple House Retreat, on the after-history and care of inebriates. Mr. Hogg bases his remarks in the records of a series of 1024 inebriate patients who have been discharged after varying periods of treatment at Rickmansworth. All the patients were men, and the majority belonged socially to the middle class. According to the histories obtained on admission, the patients were roughly divided into regular (or continuous) and periodic inebriates, the regulars outnumbering the periodics by about three to one. The writer's experience leads him to conclude that, while the duration of institutional care requisite to produce the best results varies with the circumstances of the individual case, there is an increased average of permanent effect corresponding to the increase in the duration of treatment up to about 12 months. The periodic inebriate appears to respond much better to treatment than does the regular drinker, 54 per cent. of the patients in the former category being reported as "doing well" after discharge, as against 37 per cent. of the continuous inebriates. The regular inebriates had on an average a longer period of excessive addiction before coming under treatment, but this fact does not appear to account for the less favourable results in their case, for in both regular and periodic drinkers the average duration of the inebriate habit was found to be practically the same among those doing well as among the total number of patients discharged. Mr. Hogg does not find that a hereditary history of inebriety, unless very pronounced and convergent, militates against the success of treatment. A hereditary history of insanity, on the contrary, affects prognosis very unfavourably. With regard to the influence of civil state, the married appear to have a three to two better chance of doing well than have the unmarried. Finally, Mr. Hogg notes that patients of phlegmatic temperament show the best results, while those of the highly nervous, and still more those of the passionate, type do least well.—An article by Mr. John Newton on Alcohol and the War gives further evidence from newspaper correspondents regarding the beneficial effect of the prohibition of the sale of vodka in Russia and of absinthe in France, and commends the example of the Allies to this country.—Dr. T. N. Kelynack contributes a short descriptive paper on the use of posters as a method of anti-alcohol propaganda during the present crisis. Some samples are reproduced in the article, and show a moderation of tone which is not invariable in temperance literature and which should greatly enhance the appeal of these posters to reasonable people.

Parasitology. Edited by G. H. F. NUTTALL and A. E. SHIPLEY, assisted by EDWARD HINDLE. Vol. VII., No. 4. March, 1915. Price 10*s.* net. Yearly subscription, £1 10*s.*—Warble Flies, a further contribution on the biology of Hypoderma lineatum and Hypoderma bovis, by Seymour Hadwen, comprises the results of experiments carried out in 1913 and 1914 on these interesting cattle parasites. The experiments, taken in conjunction with the evidence of Carpenter and Gläser, lend support to the view that after the larvæ of the warble flies hatch from the eggs, laid on the hairs of the cow, they bore their way directly through the skin and subsequently migrate to the gullet, where they get a freer supply of oxygen and a loose areolar tissue which offers comparatively little resistance. Later the larvæ migrate to beneath the skin of the back, where they produce the well-known warbles, and when mature escape from the cow by again boring through the skin.—A list of the trematode parasites of British marine fishes, by William Nicoll, will be extremely useful to all students of this class of parasites, as the author has given a list not only of all trematodes found in fishes caught in British waters, but also of those found in British fishes in other parts of the world, together with the authorities for each record.—Note on a Case of "Tick Paralysis" in Australia, by C. Strickland, records the symptoms of a boy of 11 years, who got a tick in his ear while in the bush in Australia. The boy suffered from paralysis affecting the face and legs, but recovered within ten days of the removal of the tick.—The Nuclear Changes in Agrippina bona Strickland, by C. Strickland, contains a criticism of certain statements made by Lewin regarding the author's original account of this gregarine.—A paper on a New Family and Five New Genera of Mallophaga, by Launcelot Harrison, comprises descriptions of five new species of this little-studied group of bird parasites. These five species are assigned to five new genera, named respectively, Eomenopon, Machærilæmus, Heteroproctus, Austrogoniodes, and Psittaconirmus. The paper is illustrated by two plates and three text figures.—Observations on the Biology of Ixodidæ, Part II., by George H. F. Nuttall, deals with the biology of 14 species of ticks. The author adds complete notes relating to the raising of five species from the egg to the adult—namely, Amblyomma hebræum, Dermacentor reticulatus, D. venustus, Rhipicephalus bursa, and R. sanguineus, all of which are important carriers of disease. Less complete accounts are given of the four species—Amblyomma variegatum, Hæmaphysalis cinnabarina, H. concinna, and H. inermis—whilst only short notes are given which bear on the two species Amblyomma splendidum and Hyalomma syriacum. The notes on Hyalomma ægyptium, Ixodes putus, and Rhipicephalus appendiculatus supplement those already published in Part I. Of special interest are the records relating to Dermacentor venustus, the carrier of Rocky Mountain spotted fever in Montana and the cause of tick paralysis in British Columbia.[1] This species is what is known as a three-host tick; the larvæ drop off their host after taking about three days for engorgement; the gorged larvæ moult and the unfed nymphs emerge and attack another host and feed for from 5 to 11 days; the gorged nymphs then drop off, and after an interval of from 14 to 15 days (at 24–30° C.) the adults emerge. These then attack a third host and copulation takes place on the body of the host, the male seeming to prefer the semi-gorged female. When the latter is fully gorged it drops off the host and after an interval of two or three days begins to lay eggs. 7140 fertile eggs were laid by one female observed by the writer. The life-cycle of this species may be completed in 68 days under the most favourable conditions, but in nature the time is said to be usually two years. According to the investigations of Rickett on Rocky Mountain spotted fever, this tick transmits the virus of the disease as a nymph if it has fed upon an infected host (man, monkey, guinea-pig, &c.) in the larval stage; when infected as a nymph the tick is infective as an adult, and larvæ, the progeny of an infected female tick, are also infective. With regard to Ixodes putus, the author describes the effects of the bite of a female which attached itself to his leg on July 13th, 1912. A well-marked and irritant swelling was produced and the area about the site of the bite remained discoloured till the spring of 1914. Even after this had disappeared the itching sensation continued to occur suddenly at intervals of about a month, the last date on which it returned being Jan. 20th, 1915. The persistence of the after-effects of tick bites is very remarkable and worthy of further investigation.—Artificial Parthenogenesis in Ticks, by George H. F. Nuttall, contains an extremely interesting note on parthenogenesis in Rhipicephalus bursa. When counting the eggs of this tick they are separated from the mass by immersing them in normal salt solution and rubbing them about gently with the aid of a camel-hair brush. The results show that the only unfertilised eggs that ever developed were those that had been subjected to this treatment, and the author is convinced that the parthenogenesis observed was artificially induced by the manipulation accompanying the enumeration of the eggs.

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[1] THE LANCET, April 10th, 1915, p. 763.

THE LANCET.

LONDON: SATURDAY, APRIL 24, 1915.

The Bacterial Infections of Projectile Wounds.

WE publish this week the third instalment of Sir Almroth Wright's Address on Wound Infections, which completes the pathological part of the remarkable dissertation which he delivered recently before the Royal Society of Medicine. The account of the new methods for studying the various factors in the treatment of wound infections will be read by all surgeons with extreme interest, and the far-reaching significance of that work will be at once appreciated. The note of challenge which is associated with all original scientific research is, of course, present, but not the most pedantic can find fault with Sir Almroth Wright's attitude towards the work and teaching of Lister. "The Listerian discovery," he says, "that prophylactic applications of antiseptics can, in the ordinary compound fractures of civil life, stave off wound infection has no direct application to projectile wounds. Prophylactic applications will give good results only when they can come into operation on the microbes. In ordinary compound fractures of civil life this will be the case. For here the microbes lie exposed on the external surface of the bone which has been thrust through the skin. The contrary holds for projectile wounds. For here the microbes are carried down deep into the tissues and lie on the internal surface of a torn and ragged track; and that track is blocked by blood clot and hernia of muscles." No one will dispute the deduction which follows upon this statement that prophylactic applications of antiseptics in such circumstances could only leave an incomplete sterilisation. And this being so, it becomes incumbent to find a procedure which will accomplish in the circumstances of projectile wounds what antiseptic solutions cannot, because of the inaccessibility of the infected parts and because, also, of the quenching of the antibacterial power of the antiseptics by the medium in which they have to be employed.

This week, too, we publish a memorandum by Sir Almroth Wright in collaboration with Mr. F. F. Burghard, Sir W. B. Leishman, and Sir Berkeley Moynihan, all employed with the Army Medical Service, and, like himself, with the rank of colonel. This memorandum should be read side by side with Sir Almroth Wright's address, which it may be said to a certain extent to translate from the language of the laboratory to the language of the hospital ward. The characteristics of projectile wounds and the bacteriology of the initial infection are described; the measures for checking the anaerobic infection of discharges and for preventing the development of tetanus, gas gangrene, and streptococcal infection are carefully considered; and the treatment is indicated where, by an unchecked anaerobic infection of the discharges, resistance of the tissues has been lowered and it becomes necessary to take immediate steps to stem microbic invasion. The general considerations in connexion with drainage and the measures for promoting the outflow of lymph from an incision or from the infiltrated wall of a projectile wound are put quite briefly. If the provision of an outlet by an incision is not free enough, even though assisted by gravity—and the memorandum suggests that in infected projectile wounds such measures for the relief of pent-up secretion will seldom be adequate—a hypertonic solution of salt is recommended to promote the outflow of lymph in order that the lymph already present, which has become poisonous to leucocytes and impotent upon bacteria, may be replaced by lymph favourable to phagocytic activity and inimical to microbes. Mr. H. Beckwith Whitehouse in this week's issue, in a note on the treatment of gunshot and shell wounds, makes special reference to carbolised glucose as a dressing. Lymph lavage can be promoted by inserting glucose and sodium citrate suppositories in the paths of wounds or along the tracks of bullets. This is one method of inducing an increased outflow of lymph from the wound; this outflow having a double action, in part it will mechanically carry away the microbes infecting the wound, but, further, this newly formed lymph has a far higher bactericidal action on the invading micro-organisms, and the phagocytes which it contains will also have a powerful action in destroying the bacteria present. Now that the principle is recognised that it is beneficial to assist the production of this increased outflow of lymph, we shall find many substances employed to stimulate it. The war will last long enough to give us much information as to the value of these various methods.

The particular indications for the employment of vaccine-therapy as part of the routine treatment of suppurating wounds are stated in the memorandum, the procedure being justified as likely to make it possible to employ conservative methods in a larger proportion of cases; while the frequent and efficient dressing of suppurating wounds with a mild aseptic is recommended. From every point of view the memorandum will be of great value to many of the medical officers now serving with the army. At present surgeons both at the front and at base hospitals are in a measure in doubt as to the best treatment to be adopted for the wounds which come under their care. The methods which have been recognised as of value in the treatment of the less intricate wounds of civil life have proved unavailing in dealing with wounds inflicted by rapidly moving bullets or by pieces of shrapnel, and infected with a virulent microbic flora. The investigations which have been undertaken under the ægis of the Army Medical Department will be of the utmost utility.

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The Final Report of the Royal Commission on Sewage Disposal.

THE issue last week of the final report of the Royal Commission on Sewage Disposal presents a general summary of conclusions and recommendations on a question which has been before the Commissioners for a period of 16 years. Since the Commission was appointed in May, 1898, nine reports have been issued, all of which, as they were published, have been dealt with from time to time in our columns. In the interim or first, second, fifth, and eighth reports the purification of domestic sewage discharging into streams received the attention of the Commissioners; the subject of the fourth and seventh reports was the discharge of sewage into tidal waters; while the third, sixth, and ninth reports related to the discharge of manufacturing effluents. The scope of the investigation has obviously been very wide, and as the sittings were continued fresh questions of a special nature were constantly appearing, inviting investigation with the view of suggesting solutions of particular problems which had arisen. The question, for example, of the discharge of sewage into tidal waters in relation to shell-fish pollution, brought to the notice of the Commissioners by the Local Government Board, involved a special inquiry into the number of serious outbreaks of enteric fever, ascribed to the eating of shell-fish obtained from sewage-polluted water. The recommendations subsequently made freed a considerable section of that industry from reproach. The closing of the sewage-polluted layings was amongst the preventive measures adopted and "oysters are in consequence far safer articles of diet than they were before the time of our inquiry," to quote the simple assertion of the final report. Quite recently the general recommendations for securing permanent and effective supervision and control both of sewage outfalls and shell-fish beds received the attention of the Local Government Board, which issued an Order under the Public Health (Regulations as to Food) Act, 1907, giving powers to local authorities to act in accordance with the Commissioners' recommendations.

In their sixth report again, which deals largely with the disposal of liquid wastes from manufacturing processes, the Commissioners recommend that standards of purification which call for no undue increase in the cost of production should be laid down, and that manufacturers should be required to comply with these standards. The Commissioners have considered each kind of trade waste separately, and, as there is a great difference between these wastes, they suggest what they consider a suitable standard for each. These suggested standards will, no doubt, be subjected to criticism by experts; indeed, some of them appear to have been arrived at on very slight evidence. But that is not a supremely important point, for the suggested limits of impurity are only intended as a guidance for a central authority when established. The larger local authorities, at any rate most of them, receive into their sewers trade waste of small volume without conditions, but many small authorities do not allow this, and there are circumstances in which such permission cannot be given as the manufacturers would be infringing riparian rights. Where it is feasible to get rid of trade waste through the sewers the problem is, of course, simplified, and in one of their earlier reports the Commission suggested the conditions under which this should be done, but, notwithstanding a general extension of the system under which purification of trade wastes is undertaken by local authorities, there will remain many cases in which manufacturers must be held responsible for the treatment of their own trade liquids, and it is with such cases as these that the first part of the ninth report deals. In a second part the Commissioners make some observations on the disposal of domestic refuse in rural areas where sewers are not available. In their opinion the water-carriage system is the best, where an abundant water-supply piped to the houses is available. Where, however, a water-carriage system is impossible dry closets may be used satisfactorily under proper supervision. This part of the report does not add very much to our knowledge, but it is interesting because it confirms that the tendency of modern sanitation towards the water-carriage system is a salutary one. In a minority report on the same subject Sir WILLIAM RAMSAY expresses views which are favourable to the extension of dry systems even when a water-supply is laid on in the houses, his reason being that the fruitful nitrogen of domestic sewage ought to be returned to the soil. The great waste of valuable material resulting from the discharge of sewage and slop water through drains is unfortunate, but it would be still more unfortunate if any discouragement of the present tendencies of sanitation should favour the spread of epidemic diseases.

The report contains an abundance of valuable material and represents an enormous amount of painstaking work contributed by recognised authorities on their subjects. It must be remembered, however, that some of this work will, sooner or later, be sure to be discounted in view of the steady and progressive march of scientific application to the problems of the disposal and utilisation of waste matters. The Commissioners' task has spread over 16 years, and the earlier recommendations may require modification, since it is probable that advances have already been made during the period in certain particulars. It is therefore reasonable to expect that the inquiry will have to be reopened sooner or later and the problems pursued through all their developments. It would, perhaps, be more satisfactory if the subject were taken up by a permanent department at the point where the Commission has now stopped; and, while the present is not the most suitable time to press for the appointment of a new bureau, there are good grounds for believing that the Government is not blind to the advantages which would be gained by the establishment of a department whose duties would be not only to deal with recent problems of sewage disposal but to ensure that full advantage is taken of the very valuable work accomplished in the past.

A Medical History of the War.

WITH a view to the compilation of an adequate medical history of the war a strong consultative body has been formed to consider the lines upon which such a history should be written. The work is intended to be upon a scale commensurate with the importance of the war, which means to say that no such medical history can ever have been contemplated, just as no such war has ever occurred. It will be presided over by the Director-General of the Army Medical Service, and the members have been well chosen in every department. Lieutenant-Colonel O. L. ROBINSON, R.A.M.C., and Sir WILLIAM OSLER, F.R.S., will be responsible for the subdivision of medicine; and Lieutenant-Colonel E. M. PILCHER, R.A.M.C., and Colonel F. F. BURGHARD for that of surgery. Colonel Sir WILLIAM LEISHMAN, F.R.S., and Captain F. W. ANDREWES, M.D., F.R.S., will supervise the subdivision of pathology and bacteriology; and Colonel W. H. HORROCKS and Lieutenant-Colonel W. W. O. BEVERIDGE that of hygiene and sanitation, this subdivision being left to military experts. The subdivision of statistics will be in the hands of Colonel H. P. W. BARROW, R.A.M.C., Dr. JOHN BROWNLEE, and Colonel W. N. BARRON, R.A.M.C.; while the historical subdivision and the secretarial work fall to the charge of Captain F. S. BRERETON, R.A.M.C., and Dr. W. MORLEY FLETCHER, F.R.S., the secretary of the Medical Research Committee under the National Insurance Act, a national body the resources of which have been placed at the disposal of the War Office.

We are sure that all our readers will welcome the information that it has been decided to compile an authoritative history of the medical side of the war. The lessons to be learned are so varied, and may be so valuable, that no pains should be spared by all concerned to make the work as full and accurate as possible. It is a fact that medical histories of past wars have been very disappointing, and no doubt this has been largely due to want of early organisation. And the start made by the new committee is, as a matter of fact, none too soon; for already some records have perished, and others would have similarly been lost if preparation for a sound official history had not caused those responsible for them to regard their trust in a more patriotic and scientific light. For the medical history of the war which is now projected is not designed to narrate only surgical and medical happenings with their statistical deductions. It is intended to give an account of the various experimental researches which are already being carried on in connexion with the maintenance of the health of the forces; and the value of these researches will be enhanced by the due preservation of all clinical records whereby standards of comparison can be instituted. We hope that the results of these various researches will see the light as soon as those concerned in their conduct feel that the conclusions will stand test, for guidance based upon sifted knowledge will be of the greatest service to our military medical officers in clinical treatment now, and perhaps for many a month to come.

Annotations.

"Ne quid nimis."

GOVERNMENT GRANTS FOR MEDICAL PURPOSES.

IN the current session of Parliament the Government will ask the House of Commons to vote £385,000 (compared with £480,000 last year) as the amount estimated to be required in the year ending March 31st, 1916, for the payment of grants towards the cost of the extension of sanatorium benefit to the dependents of insured persons under the National Insurance Act, 1911, and of the treatment of tuberculosis generally. Provision is included in this estimate for the statutory grants under Section 17 of the Act, and also for special grants towards the cost of schemes undertaken by the local authorities (or by combinations of local authorities), with the approval of the departments administering the grants, respecting the treatment of tuberculosis. The grants will be administered in England by the Local Government Board, in Wales by the Welsh Insurance Commission, and in Scotland and Ireland by the Local Government Boards for Scotland and Ireland respectively, and will be calculated on the basis of 50 per cent. of the net cost, as ascertained through the audit of their accounts, incurred upon the schemes by the Insurance Committees or local authorities, singly or in combination, after taking into account the sums applicable thereto out of funds under the National Insurance Act and other receipts in connexion with the schemes. The amount provided will be allocated between the three Local Government Boards and the Welsh Insurance Commission, and issues will be made from the vote to these departments by the Treasury from time to time as required. A vote of £25,000 will also be asked for to provide grants in the year ending March 31st, 1916, to assist in the provision of laboratory facilities with a view to the prevention, diagnosis, and treatment of disease. The money will be allocated, in accordance with a scheme made by the Treasury, to the English, Scottish, and Irish Local Government Boards, for the purpose of distribution by those departments, with the approval of the Treasury, as grants to county councils or sanitary authorities who are willing to provide or arrange for the provision of laboratory facilities with a view to the prevention, diagnosis, and treatment of disease. The scheme may provide that, if in any area the local authority is unwilling to arrange accordingly, a share of the grants can be allocated to the National Insurance Joint Committee for distribution to the Insurance Committee of that area towards the provision of such facilities and aids. The House of Commons will likewise be asked to vote £2015 for the expenses of the Highlands and Islands (Medical Service) Board for the year ending March 31, 1916, and £42,000 for a grant in aid of the Highlands and Islands Medical Service. The grant in aid will be paid to a separate fund to be called the Highlands and Islands (Medical Services) Fund. Subject to regulations to be made by the Treasury with respect to accounts, audit, and accumulation, the fund will be administered by the Highlands and Islands (Medical Service) Board in accordance with schemes to be approved by the Secretary for Scotland with the approval of the Treasury.

THE DANGERS OF SEA TRAVEL.

THE activity of German submarines and the measure of success attending their attacks upon defenceless merchant vessels have revived the question raised after the *Titanic* disaster as to the extent to which preparation for possible emergency is provided for on board passenger vessels. Would the instruction of passengers beforehand avail to diminish the loss of life inseparable from the sudden destruction of a large ship at sea? Correspondence in the *Times* and other newspapers tends to show that while some experienced travellers and sea-goers believe that more could be done, and ought to be done, by way of antecedent preparation for the worst, others with equal opportunity for forming a sound judgment are impressed with the difficulty of doing more than to give elementary directions to those who are not members of the crew; to allow the officers and crew to take the steps dictated by the circumstances when they have actually occurred appears to them the only practical course. In this matter it is as well to remember that the ships, whose danger is a cause of anxiety to all, may be divided roughly into two classes—those which make comparatively long voyages and those which should reach their destinations in the course of a few hours. In the case of the former, more is naturally possible in the nature of boat drill and instruction as to the routine to be observed than when the contemplated voyage is for a day or so only, or more likely for a night. The chairman of the Union Castle Line, whose views have been published in the *Times*, has pointed out that the nature of the emergency likely to call for the getting of passengers into boats varies at all times so greatly that it is almost impossible to give them any but the most elementary drill or instruction for the actual conditions that may occur. It may be possible, for example, to lower boats from one of the decks intended for the purpose and not from another, and it is of supreme importance that the operation of lowering boats should not be interfered with by the conduct of those to save whom they are intended. Sir Owen Philips is probably quite right when he contends that the boat deck should be free of passengers when the boats are being lowered away, and further when he indicates the saloon as a proper place for the assembling of passengers until preparations have been made for them to leave the ship. Here again, however, the variety of treatment accorded by the officers of German submarines to their victims compels us to see that there may be time on one occasion but not on others for disciplined measures, such as assembling in a given part of the ship, and that some parts of a ship may remain available when others, selected for the purpose beforehand, are not. With regard to life-jackets, there can be no doubt that these should be provided and accessible in sufficient numbers for the use of all, and that all should have some opportunity to learn how to put them on before the occasion to use them in earnest arises. Passengers, however, will differ from one another in their capacity to understand the not very complicated operation of putting on a life-jacket, and in home-coming ships from distant ports the opportunity for instruction will be greater than in others. At all events it can be given, subject to the observation that it is very undesirable to alarm needlessly the more timid travellers by ostentatious preparation for an event which may never occur. Fortunately for the task of life-saving at sea, which at any time may be thrust suddenly upon the officers and crews of our passenger-carrying marine, the circumstances of war must have eliminated from the passenger lists a large percentage of those who at ordinary times travel, and when danger arises are a helpless source of anxiety and responsibility to others. Assuredly this is above all a time at which those who would undertake voyages in order to gratify their curiosity or their love of change, their wish to seek a more congenial climate, or, in general terms, to travel unnecessarily, should be urged by their friends and by the dictates of their own good sense to stay where they are, or, at any rate, not to go down to the sea in ships. Those brave women and men who at the call of duty are daily risking their lives by sea travel are, many of them, on their way to scenes of more imminent danger than is afforded by the enemy's submarine tactics. These can be trusted to act in emergency with coolness and courage and to do their best for the safety of others as well as for themselves.

DR. RIBEMONT-DESSAIGNES ON PAINLESS LABOUR.

IN THE LANCET of August 1st, 1914, a summary was given of a communication to the French Academy of Medicine of the results obtained by Dr. Ribemont-Dessaignes at the Hôpital Beaujon by the administration in labour of a supposed new preparation of morphia, prepared by Paulin, obtained by subjecting the hydrochlorate to the action of fermenting beer-yeast. The result was practically painless labour, without muscular inhibition. In 113 cases there was no accident to the mothers, and though some of the 115 infants (there were two cases of twins) were at first sluggish at breathing, suspension by the feet or insufflation by the mouth was sufficient to determine their revival. Dr. Ribemont-Dessaignes made a further statement, in which he says: "In my publication of July I only had the clinical aspect in view. ...... The product supplied to me by Paulin appeared to me to have a different effect on parturient women to that of morphia *in the usual doses*, and seemed at first sight to be justly considered a new substance. ...... The experiments on animals which my colleague

Professor G. Pouchet undertook at my request led him to think that the treatment with fermenting beer-yeast had really modified the toxicity of the morphia, and made it more available for the accoucheur. But subsequent analyses made by several highly competent chemists seem to show that M. Paulin's product was simply hydrochlorate of morphia in solution, but *of the strength of 3·24 per cent.* instead of the usual 1 per cent. strength. Since September last I have only used in my clinique a solution of hydrochlorate of morphia pure and simple, of 3·24 per cent. strength, to which I add a little strychnine and caffeine. I inject 1 cubic centimetre [in the previous communication the injection is directed to be made under the skin of the abdomen]. If the result is not satisfactory I make a second similar injection at the expiration of two or three hours. The clinical results which I obtain are identical with those yielded by Paulin's solution. We are therefore justified in affirming that we may thus attenuate, or even suppress entirely in some women, the pains of parturition without danger to the mother (I have over 200 cases) and with no great risk to the child. The dose of morphia solution which at 1 per cent. arrests labour, at 3·24 per cent. does not; this is the point to bear in mind. It has long been known that the parturient woman tolerates opium well, and the present treatment exemplifies this tolerance. We have yet much to learn about morphia, and all this shows it. The desintoxication of morphia by Paulin's process has still to be proved." This statement by Dr. Ribemont-Dessaignes will be a disappointment to many who have published wild accounts of the procedure.

A SUGGESTION TO THE GOVERNMENT ON THE DRINK QUESTION.

THERE can be little doubt that the Government have got a difficult problem before them in regard to the drink question, but if all that is written is true and if the drinking of immature whisky is chiefly at the root of the mischief, why not stop its sale by enforcing at once a system of compulsory bonding? This would instantly check the sale of cheap whisky because it can only be cheap when it has not been matured. The maturation of whisky, in other words, costs money. In the final report of the Royal Commission on Whisky and other Potable Spirits issued in 1909 the following sentence occurs: "In our opinion, the compulsory bonding of spirits for a prescribed length of time could only be justified if it were established that such a restriction of trade is necessary *in the interests of public health.*" Surely the justification has arrived if it is true that the drinking of immature whisky has led to a serious inefficiency of labour. It is clearly only immature whisky that can be sold cheap. If, say, five years in bond were compelled the consumer would necessarily have to pay a higher price for the spirit, as there is loss by evaporation and there is the cost of storage. It will thus be appreciated that compulsory retention in bond would stop immature whisky drinking, and in many cases the drinking of whisky at all, since whisky would become automatically more expensive, and that without imposing a direct tax. At the same time compulsory bonding would remove the necessity for total prohibition, which would affect many classes quite unfairly. The suggestion that bonding for a period of years should be made compulsory is not impracticable, since in Canada the rule has held for a good many years that no whisky can be sold that has not been maturing in bond for not less than five years, and the regulation has worked to the advantage of the consumer.

POLYGLANDULAR SYNDROME, WITH TUMOURS IN THE SUPRARENAL AND PITUITARY GLANDS.

Dr. John Anderson, the director of the clinical laboratory of the Victoria Infirmary, Glasgow, has published in the March number of the *Glasgow Medical Journal* a case of some clinical and pathological interest, in which after death lesions were found in the pituitary and suprarenal glands. The patient was a woman aged 28 years, who for five years had suffered from indefinite and confusing symptoms, and in whom a development of certain secondary male sexual characters had taken place. Her illness began with vague general symptoms of asthenia and ovarian pain, coupled with irregular menstruation, which during the latter three years of her life passed into complete amenorrhœa. Her complexion changed from pale to red, her body gradually became stouter, and hair made its appearance on the face and body. At the same time a certain degree of proptosis became noticeable and she began to suffer from extreme headaches. On her admission to the Victoria Infirmary in 1913 the chief points to draw attention were well-marked exophthalmos, a florid complexion, and growth of hair in front of the ears and on the upper lip and chin. The patient looked older than her age. It was noted that the skin was harsh and dry and that there were petechial hæmorrhages on the arms and legs. No optic neuritis was found, though the headaches were very severe. While under observation the patient developed spontaneous petechial hæmorrhages on the slightest knock, even touching, so that she was never free from ecchymosis. Hæmorrhage from the bowel occurred several times. Death eventually took place by a gradual asthenia. At the post-mortem examination the thyroid was found to be slightly enlarged and congested. Microscopically it showed changes resembling those seen in cases after castration. Chronic interstitial nephritis was present, and the renal vessels were arteriosclerotic. The suprarenals were slightly enlarged, and in the medulla of the left was a small tumour, which, microscopically, was seen to resemble the structure of the zona fasciculata. The enlargement of the organ was due to an active hyperplasia. The internal organs of generation were senile in character. In the anterior lobe of the pituitary was a small adenomatous tumour. In the rest of the anterior lobe the chromophobe cells had markedly increased at the expense of the eosinophiles. The pars intermedia was abnormally cystic, while the posterior lobe was normal. Dr. Anderson's case resembles in many points one shown by Dr. H. G. Turney at the Royal Society of Medicine in 1913, and also one in Professor Harvey Cushing's book on the pituitary body (Case XLV.). In this instance there was pathological evidence of suprarenal hyperplasia and of both hyper- and hypo-functioning on the part of the anterior lobe of the pituitary. According to the author's view, the pituitary disturbance is the chief factor, and he regards the case as primarily one of hypopituitarism. The influence of the pituitary secretion on the ovary is stimulating in character, and its withdrawal leads to loss of sexual characteristics and atrophic changes. Its influence on the suprarenal and thyroid, on the other hand, may be regarded as inhibitory, and decrease of its function may allow of a hyper-functioning of these organs, with, in the case of the former, symptoms of hyperadrenalism and development of secondary male sexual characteristics. The association of changes in secondary sex characters and impairment of function of the suprarenal cortex is well established and has received considerable publicity. The term "suprarenal virility" has been applied in France to those female cases which as a result of suprarenal disease take on the secondary sex characters of the opposite sex.

THE PUBLIC HEALTH IN BRITISH COLUMBIA

IT is not unnatural that the public health report for British Columbia, which was recently noticed in our columns,[1] should be, as we said, exiguous, for the Province, with its enormous extent and its population of 400,000, has had no medical officer since February, 1914, when the late Dr. Fagan retired. Since that time the health work of the Province has been done by Dr. Bapty, formerly the bacteriologist, also in general practice, but since he has been on service as a major in the Canadian Mounted Rifles the office has been in charge of a sanitary inspector. A local correspondent tells us that this gentleman is a most competent courteous official, but scarcely able to deal with the problems brought for discussion by medical officers and sanitary engineers. There have been protests from the medical profession against this state of things, and the matter has been mentioned in the election campaign now proceeding, while the situation may entail increasing damage to health in the province. So progressive a colony as British Columbia should at once get herself out of the dark ages by putting the care of her public health in the hands of a medical officer. Dr. Bapty did good work by urgently pressing preventive inoculation against typhoid fever on the population even before the war.

THE EXTRACTION OF NEEDLES.

THE extraction of needles from tissues falls to the lot of every practitioner, and when access to the X rays is not possible, as frequently happens, the operation may be very difficult. In the *Inter-state Medical Journal* Dr. P. G. Skillern has published a paper on the extraction of needles without this aid containing many useful hints. For anæsthesia local infiltration with novocain-suprarenin solution usually suffices, but nitrous oxide may be used as well. In the hand the needle is usually driven in by the sewing machine, and since the eye is at the point goes eye foremost. Hence if a thread is carried in no attempt should be made to extract the needle by traction on the thread, not only for reasons that are obvious, but also because the thread forms a valuable guide to the position of the needle. In the foot the needle is also driven in eye foremost, since it is usually an ordinary sewing needle that has been stuck in the floor. The same holds for another common situation—the buttocks. The diagnosis is made by the history, the presence of a punctured wound, abiding pain, and especially by an area of circumscribed induration and tenderness at one spot. The last is important in locating the needle. Dr. Skillern's method of finding a needle without a skiagram depends upon the rigid observance of four rules: 1. The field must be absolutely bloodless. This is attained by exsanguinating the tissues from the fingers or toes to above the elbow or knee by a Martin's bandage. The first turns are uncoiled sufficiently to expose the field of operation; the remaining turns keep the blood back. 2. Follow the black track which leads from the skin puncture to the needle. The success of this step depends on that of the first. 3. Efficiently retract the tissues. 4. Lose no time in searching through the fat, since the needle travels directly to deep fascia or bone, the subcutaneous fat being too soft either to break or stop it. At the moment of impact the elastic fat is compressed and the needle is driven into and caught in a strong grip by the dense palmar or plantar fascia or by bone. When the pressure is released the elastic fat springs back into place and, as it were, swallows up the needle. With the patient properly anæsthetised a free incision is made directly down to the deep fascia. Its length varies directly with the depth of the subcutaneous fat. In some cases time is gained by adding another limb so as to make a T-incision, or even a crucial incision may be necessary. The incision includes the skin puncture and the black track is exposed and followed to the deep fascia. The latter is thoroughly exposed by retracting the flaps. The needle is usually found sticking into the deep fascia. If it has penetrated more deeply this fascia must be incised and retracted. The underlying muscles or tendons are examined each in its own plane. This method of "plane dissection" is very important. If the needle is not in one plane it must be in some other, and each plane must be successively explored. Before each plane is dissected it is palpated with the tip of the little finger or explored with the handle of the knife, which may scrape against the needle. The bones form the last plane, and when they are reached the needle has probably been found. It should be carefully extracted in its own axis, for it is liable to break. By this plan the usual causes of failure—too small an incision and insufficient retraction—are eliminated, and, contrary to prevailing opinion, a skiagram is not always essential.

THE LATE DR. A. A. W. HUBRECHT.

THE death of Dr. Hubrecht has removed a very considerable person from the zoological world. Among those who have devoted themselves entirely to the purely zoological side of biology—not being concerned, that is, with the more theoretical aspects of that science, heredity, sex, and so forth—Hubrecht has occupied for some years a prominent position. His researches have been mainly along two lines. The best-known work, perhaps because it took up many more years in its execution, dealt with the group of worms usually called nemertina. A reference to any zoological text-book or treatise will at once show the large number of important contributions which this zoologist has made to our understanding of those animals. The genus Hubrechtia remains as a sign of his acknowledged mastery of this group. In more recent years Dr. Hubrecht devoted a great deal of attention to the development of the mammalia; while besides these two main lines of work he contributed memoirs on various biological topics. Dr. Hubrecht was particularly well known in this country by reason of his frequent visits to the British Association and his thorough acquaintance with English. He contributed many of his memoirs to the *Quarterly Journal of Microscopical Science*, and wrote for the magnificent series of "Reports" obtained by the voyage of H.M.S. *Challenger* the part dealing with the Nemertina.

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[1] THE LANCET, March 6th, 1915, p. 505.

THE TREATMENT OF SCIATICA.

Two papers of some interest, one on the treatment of sciatica by perineural infiltration with saline, by Dr. William M. Leszynsky, and the other on its treatment by epidural injection of saline, by Dr. Israel Strauss, appear in the *Medical Record* (New York) of Feb. 6th. The perineural infiltration method was first brought prominently to the attention of the medical profession in 1907 by Dr. J. Lange, of Leipsic. It consists in the injection of a large quantity of fluid under pressure directly over the sciatic nerve. Prior to that date injections of sterilised air, similar in principle, had been given with conspicuous success in cases of sciatica, lumbago, &c., in France and elsewhere. For a long time previously, too, injections of cocaine and analogous medicaments had been used in sciatica with good results. The idea of the injection of air, or of fluid in quantity, is that thereby adhesions in the neighbourhood of the nerve are loosened or stretched or broken down. Dr. Leszynsky is of the opinion that, since prompt relief can be obtained in acute and recent cases, where the formation of adhesions can scarcely have taken place, the relief of pain must be due either to blocking of sensory conductivity or to the pressure and absorption of the fluid producing changes in the circulation and nutrition of perineural structures. The technique of the method is simple enough. With the patient lying on his face with legs extended, and a firm pillow under the lower part of the abdomen, the point of exit of the great sciatic from the pelvis is determined in one or other of the usual ways, the skin is painted with iodine, and then the needle of a syringe is pushed in perpendicularly till the sciatic sheath is reached, when the patient will experience a sharp pain radiating down the thigh, or in the heel, or there may be a twitch of the leg or calf. Sterile warm (95° to 100°F.) physiological saline solution is then injected by the syringe, in quantity ranging from 80 to 120 c.c. There may be aching or heaviness or numbness in the limb afterwards, but this rapidly passes off. The interval following the first injection, before another is given, naturally varies according to the degree of relief obtained. Sometimes only one injection is necessary. Dr. Leszynsky is in the habit of waiting from 36 hours to one week before repeating the injection. It is most important to note that it is not intended that the nerve sheath should be entered by the needle, otherwise the forcing of a large quantity of fluid into the nerve trunk may result in a traumatic neuritis. It is recommended that a blunt stylet, projecting 1 millimetre beyond the cutting point of the needle, should be inserted when the latter is once through the skin, to obviate puncturing a blood vessel or the nerve sheath. Dr. Leszynsky does not advise this perineural treatment in every case, but mainly for subacute and chronic intractable cases, and he has used it with success some 160 times. As for the epidural method, Dr. Cathelin, of Paris, recommended it originally, and employed it in various conditions with uniformly good results. For the purposes of epidural injections the epidural space begins at the first sacral vertebra, where the dura mater ends, and it extends down to the sacrococcygeal articulation, where the injections are made. The opening into it is bordered laterally by two prominences, the cristæ sacrales laterales, which are usually easily felt by the finger, and it is covered by the dense ligamentum sacrococcygeum. It lies generally about two centimetres above the end of the gluteal fold. Dr. Strauss has his patient lying on the side, with knees and thighs flexed. After anæsthetising the skin over the foramen with novocaine he pushes through the ligament and into the foramen a strong needle, 1 mm. in calibre, for a distance of about 6 cm., to reach the second sacral vertebra. The injection consists of warm saline. To the first 10 or 20 c.c. of saline is added 0·3 c.c. of novocaine with adrenalin and a few minutes allowed to elapse. Then some 60 or 80 c.c. in all are injected. As a rule the patient feels merely an uncomfortable pressure in his lower spine. In some 19 cases Dr. Strauss has obtained excellent results. He also recommends it mainly in subacute and chronic cases, and holds that it is preferable to perineural infiltration, inasmuch as no injury to the nerves has been reported following on epidural injection. He considers that many cases of sciatica are really due to a root neuritis, a "radiculitis" of the roots of the nerve, and these are the cases more particularly where epidural injections are indicated.

A NEW METHOD OF DIFFERENTIATING BETWEEN EXUDATES AND TRANSUDATES.

HITHERTO the method most usually adopted to distinguish between these two classes of fluids has been that of Rivalta. This observer showed that if a drop of a transudate, which is of a lower specific gravity and contains less cellular elements and less albumin than an exudate, be added to a 2 per cent. solution of glacial acetic acid, the fluid remains clear, but if an exudate be added a bluish trail like a puff of cigarette smoke is seen as the material makes its way down through the fluid. In the last number of *Annali dell' Istituto Maragliano* Dr. F. Morelli describes a new method which seems to yield much more certain results when compared with those obtained by using Rivalta's reaction on the same fluids. This new method is based on the reactions between mercury and different forms of albumin, causing precipitates and forming corresponding metallic albuminates. Dr. Morelli noticed that when drops of fluid obtained from a serous cavity were let fall on a saturated aqueous solution of corrosive sublimate the characteristics of an exudate were shown by the formation on the surface of the solution of a dense, compact coagulum of albumin, yellowish in colour, often remaining adherent and suspended, but sometimes falling in a mass without disintegrating. When, on the other hand, the fluid was of the nature of a transudate a coagulum of albumin formed on the surface which very quickly split up into small particles and fell to the bottom. The only exception to this rule was in the case of pleuritic exudates of a tuberculous nature in which the reaction was always negative, and this uniformly negative reaction furnishes an important indication in etiological diagnosis. Rivalta's reaction did not show this difference

CHINA MEDICAL MISSIONARY ASSOCIATION.

THE biennial conference of the China Medical Missionary Association was held on Feb. 2nd at Shanghai, with Mr. Duncan Main as president, when a discussion was opened on Preventive Medicine in China by Dr. Arthur Stanley, health officer of Shanghai. Dr. Stanley's paper was entitled "How to Initiate Public Health Work in Chinese Cities," and was much to the point. Essentials in Dr. Stanley's opinion are: some form of authority for control of finance, staff appointments, and general policy, such as a municipal council; secondly, a highly trained health officer; thirdly, sanitary law; fourthly, money, which would be mainly obtained from the sale of ordure, house refuse, together with market, slaughter-house, and licence fees. A fifth necessity was a well-appointed central office, including a sanitation laboratory and a staff, which in the near future should be wholly Chinese. Dr. Stanley concluded: "The practical prevention of disease is now reduced to simple terms and scientific precision. The main thing in China would appear to be to prevent waste of effort and to direct energy into the right channels on those measures which mean most." That sanitary work is needed in China is obvious from an excellent paper read by Dr. Wu Lien Teh—well known to many friends in England, made during his Cambridge days and since, as Dr. G. L. Tuck—the Director of the Army Medical College at Tien-tsin, who pointed out that though enteric fever, pneumonia, and most diseases due to alcohol are much rarer in China than in Western lands, yet many preventable diseases, such as small-pox, typhus fever, plague, and leprosy, together with many skin affections, were far too common. Dr. Wu recommended the teaching of elementary hygiene in the schools, the establishment of sanitary boards and social leagues, the members of which should look after district nursing and the distribution of wholesome food, especially milk, and should carry on an educational campaign. Also there should be established at Peking a central public health institute. By these means he hoped that a great and necessary work would be done—namely, the awakening of a sanitary conscience in China. Among other papers we may mention the following. Obstetrical Experience in Futsing City, by Dr. Mabel C. Poulter, who gave an appalling account of native methods in vogue, and showed the very good results from the treatment in hospital. Out of 1291 cases there were 8 maternal deaths, and of these 3 were emergency cases who had been two or more days in labour and had been attended by native midwives. Dr. Logan, of Changteh, communicated his five years' experience in aseptic surgery at an inland hospital. Of clean cases—i.e., those in which the surgeon could exercise control before, during, and after operation, 97·5 per cent. healed by primary union. Altogether the conference was a great success.

MEDICAL MEN AND THE LAY PRESS.

WE are at all times of opinion that medical men writing upon medical subjects in the lay press should exercise great care and discretion in their choice of subjects and in their manner of approaching them. Advice given in popular terms which will tend to the preservation of the public health can be very useful, and information as to the nature of a particular disease if it will have the effect of sending patients in the early stages to seek medical advice—general medical advice, that is, and not advice from Dr. A or Mr. B—may not be amiss in some instances. Nevertheless, to give a bird's-eye view of some form of disease, which shall afford the requisite amount of information without raising doubtful questions, causing needless alarm and anxiety, or leading laymen to think that they know all about the subject discussed, is far from easy, and the attempt to do so should generally be avoided. In any case, the topic selected should be treated cautiously and, above all, seriously, efforts to attract by "bright" pen-pictures, by epigram, or by irony being avoided as sure to be misunderstood. Recently a writer, described as a physician, discussed "kidney disease" in the *Sunday Chronicle*, and was betrayed, we imagine, by his desire to captivate the attention of his readers, into writing a great deal which, for the reasons suggested above, he had better have left alone. Towards the end of his article the following passages occur. We quote them in the form in which they appear in the pages of the *Agents' Journal and Official Gazette*, where they are accompanied by the expression of strong and not undeserved disapproval.

> There is no treatment for Bright's disease, and no drug has the least effect on it. ...... My own advice is, I fear, somewhat unscrupulous. It is to effect as big and as many life policies as you can before you are discovered (*sic*) and then go and follow an Arcadian existence in the South Sea Islands ...... and do your relatives a good turn in the end.

On the face of it this constitutes an invitation or recommendation to attempt a fraud, and a signed article in the *Agents' Journal* so treats it, stigmatising the whole passage as "a slander against, and an insult to, the medical profession," and hoping that "those organs which may be regarded as entitled to speak for the medical profession will, without delay, repudiate and discountenance 'advice' so discreditable and wicked as that we have quoted above." So far as we are concerned, we most willingly repudiate any such advice, and are fully prepared to "discountenance," not only the passages selected for condemnation, but the whole article in which they occur as being entirely unwise and undesirable. We do not think the writer intended to advise the commission of a fraud or even to suggest that its perpetration would be easy. In an earlier part of his article he informs his readers that disease of the kidneys is frequently first discovered when the patient tries to insure his life, not having before been suspected, so that he would be no doubt the first to point out the impracticability of following his own recommendation. We fear that he meant to be "bright" or "smart," and disease is best not treated in that literary manner.

WE regret to report the death of Sir Thomas Clouston, which occurred at Edinburgh on April 19th, within a few days of the attainment of his seventy-fifth year.

Dr. James Alexander Murray has been appointed by the executive committee general superintendent of the Imperial Cancer Research Fund and director of the laboratories.

THE work of the Departmental Committee appointed in March, 1914, to inquire into and report on matters affecting the care of the blind was interrupted by the outbreak of the war, but it is hoped that the sittings will be resumed during this year.

MEMORANDUM ON THE TREATMENT OF THE BACTERIAL INFECTIONS OF PROJECTILE WOUNDS.

BY

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SIR B. MOYNIHAN, AND SIR A. E. WRIGHT, F.R.S.,
ARMY MEDICAL SERVICE.

IT is proposed in this Memorandum (*a*) to synopsise the experience obtained in connexion with wounds in this war; (*b*) to supplement this by setting out the chief data which have been furnished by a bacteriological study of the wounds; and (*c*) to lay down certain broad principles of treatment for the guidance of those who have not seen the conditions in the present war, or who have seen only an early or a late phase in the history of the wounds.

The present Memorandum will be followed up, as soon as certain researches are completed, by Memoranda on the Employment of Antiseptics and Vaccines respectively.

I.—CHARACTERS OF PROJECTILE WOUNDS AND BACTERIOLOGY OF THE INITIAL INFECTION.

The wounds made by projectiles are not in any respect comparable to clean-cut, swabbed-out, aseptic operation wounds or to any of the accident wounds seen in civil surgery.

Where the projectile has passed through the flesh there will, in the ordinary case, be a torn and ragged track, with an irregular surface of heights and hollows produced by the hernia of muscle and the retraction of the severed fibres. Where the projectile has come against bone this will be generally splintered, and the track will lead down into widely ramifying crevices between comminuted fragments.

There will also in practically every artillery wound be included foreign matter—a projectile, or shreds of clothing, or fragments of bone, and with these lacerated muscular and connective tissues which will slough. In addition, the wound will be full of blood clot and effused lymph. And lastly, the projectile, when it has traversed soiled clothes or a soiled skin surface, will have carried in microbes, and these will have been sown all along the track.

This deep sowing of microbes, taken together with the blockage of the wound by blood clot, and the not infrequent obliteration of a section of the track by hernia of muscle, will, in the case of any deep or perforating wound, make the effective sterilisation of the wound by antiseptics impossible.

Of the microbes which are carried into the wound the most formidable are the anaerobes and facultative anaerobes. These are found in very large numbers in practically every case arriving at the base from the front.

Three species of microbes here come into consideration. The *streptococcus*, the one microbe which is, one may say, invariably present, is primarily responsible for the suppuration which will supervene in the wound. The *tetanus bacillus*, or a bacillus which is morphologically indistinguishable from this, is present in the pus from a certain proportion of cases. And in practically all the wounds we have also the *bacillus aerogenes capsulatus* of Welch (*bacillus perfringens*). This produces a characteristically offensive, thick, frothy, rusty brown, sometimes almost fæcal, discharge.[*]

The anaerobic infections of the imprisoned discharges which are here in question, may, if unchecked, lead to graver consequences. The streptococcal infection may lead to an infection of the tissues in the form of erysipelas or deep cellulitis, and it may culminate in septicæmia. The tetanus infection will, if the microbe cultivates itself sufficiently freely and elaborates enough toxin in the wound, give rise to tetanus. And the bacillus of Welch, when it manages to invade the tissues, will generate gas, producing a gas phlegmon and also an obstructive gangrene in the affected limb (so-called *gaseous gangrene*).

II.—MEASURES FOR CHECKING THE ANAEROBIC INFECTION OF DISCHARGES AND PREVENTING THE DEVELOPMENT OF TETANUS, GAS PHLEGMON WITH GANGRENE, AND STREPTOCOCCAL INFECTION OF THE TISSUES.

The rational line of treatment for the prevention of the grave sequelæ which are here in question will be to check at the earliest possible moment the anaerobic infection of the discharges.

The wound ought to be freely opened up. It ought then to be carefully cleansed with an antiseptic solution (*vide* Memorandum on Antiseptics—Therapeutic Employment); all foreign bodies, sloughs, and blood clot (as far as this is possible without risk of hæmorrhage) being carefully removed. Then a very wide drainage-tube which will admit air to the interior ought to be inserted, and, especially in those cases where there is much laceration, steps ought to be taken to promote the outflow of lymph from the walls of the wound (*vide infra* Section IV.).

By such steps we may hope to put an end to the anaerobic infection and to obtain instead of foul smelling, gas impregnated, decomposing discharges a more or less "laudable pus."

Where owing to the exigencies of war conditions it is for the moment impossible to carry out the required surgical measures or where from the nature of the case the wound cannot be effectively drained, it will be specially important to abstain from doing anything which might still further favour the anaerobic infection.

(*a*) Wounds should not be sewn up after operation. We can never be sure that the projectile has not carried in infection, and we cannot under war conditions and during transport count upon the patient being kept, as he should be, under continuous observation. Plugs, except where there is actual risk of hæmorrhage, should never be left behind in the wound, for they bank back the discharges and establish anaerobic conditions. For the same reasons it will be necessary to see that the wound is not wrapped up air-tight, that discharges are not allowed to dry upon the bandages, and that the mouths of drainage-tubes are not blocked by the pressure of the dressings.

(*b*) Moreover, it will, pending the opening up and cleansing of the wound, be very desirable to take certain specific prophylactic measures. By an injection of antitetanic serum we may hope to neutralise any tetanic poison which may be absorbed from the wound.

(*c*) Further, by the injection of a prophylactic dose of a vaccine containing the bacillus of Welch and the streptococcus (issued as *Combined Antigangrene and Antisepsis Vaccine*) we may hope to stave off an invasion of the tissues by these micro-organisms (*vide* Memorandum on the Employment of Vaccines).

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[*] *Probable derivation of these anaerobic microbes.*—All these microbes would seem to be of fæcal derivation. The bacillus perfringens in particular is an inhabitant of the alimentary tract, and it can (by implanting in boiling milk and anaerobic cultivation) be readily recovered from the fæces of men and animals, from earth soiled with fæces, and from the soiled uniform of the soldier.

It must, however, be clearly realised with regard to these measures that they are only temporising methods, and ancillary to such cleansing and drainage of the wounds as may in a particular case have been for the moment practicable.

III.—TREATMENT OF STREPTOCOCCUS INFECTIONS OF THE TISSUES AND GAS PHLEGMON.

When by an unchecked anaerobic infection of the discharges the resistance of the tissues has been lowered, and these have been invaded by microbes, it will be necessary to take immediate steps to stem that invasion.

We have at disposal two different methods of procedure: (*a*) We may take steps to increase the antibacterial powers of the blood fluids; and (*b*) we may lay open and effectively drain the tissues (*vide infra* Section IV.) and so bring back to these their normal resisting power. These methods will be applicable according to circumstances, separately or in combination.

A streptococcal infection which takes the form of erysipelas can practically be always promptly extinguished by an injection of streptococcus vaccine (*vide* Memorandum on Employment of Vaccines) without recourse to any surgical measures.

When a streptococcal infection takes the form of a diffuse cellulitis vaccine therapy will rank only as an auxiliary measure, and the laying open of the infected tissues and the establishment of effective lymph lavage by the method indicated in the next section will be the essential.

What applies to the case of streptococcal cellulitis applies *a fortiori* to all infections of the tissues by the *bacillus of Welch*. In every case these must be opened up and effective lymph lavage induced.

In connexion with the actual surgical measures we have two cases to consider:—

(*a*) Where the infection follows a superficial course manifesting itself in dusky blotchings of the skin and gaseous emphysema in the subcutaneous tissue, it will suffice to open this up freely by incisions carried down to the plane of the muscle. (And it is here thrown out as a suggestion that a more efficient evacuation of the lymph would be obtained if the incisions were disposed transversely instead of axially to the limb.)

(*b*) Where the deeper tissues are diffusely invaded, and where the limb, owing to the internal tension, has assumed a blanched, wax-like appearance, incisions into the subcutaneous tissue would not relieve matters, for the underlying muscle would protrude into and block the wounds. In these eminently dangerous cases it will generally be necessary to amputate. But it may sometimes be possible to save the limb by the free opening up of the deeper tissues and the introduction of large drainage-tubes.

In amputating for diffuse infection of the deeper tissues, or, as the case may be, for a progressive infection of the subcutaneous tissue, it is advisable, inasmuch as it is in these cases essential to obtain an absolute maximum of drainage, to do the flapless amputation—i.e., to cut across all the tissues at one and the same level and to leave the wound completely open.

IV.—GENERAL CONSIDERATIONS IN CONNEXION WITH DRAINAGE AND MEASURES FOR PROMOTING THE OUTFLOW OF LYMPH FROM AN INCISION OR THE INFILTRATED WALL OF A WOUND.

The primary object of all opening up of wounds and infected tissues, in short, of all drainage operations, is, of course, to provide issue for pus and infected discharges.

But the mere provision of an outlet is not enough, nor is it enough to see the outlet so disposed as to allow of gravity carrying off accumulated discharges.

What we are seeking to secure will not have been attained until such lymph as may have become poisonous to leucocytes and impotent upon bacteria has been extracted from the tissues; until that lymph has been replaced by a lymph which is favourable to phagocytic activity and inimical to microbes; and until this last is being "drawn" into the wound and is establishing in it conditions which are favourable to healing.

When anything less than this has been achieved by the use of the knife and, in particular, in the case where in despite of incisions the infective process has advanced, our drainage operation will have failed in its object, and our failure will be attributable to a sealing up of the fenestræ in the tissues and a stanching of the lymph outflow.

The remedy for this is to apply to the wound a hypertonic solution of salt to promote the outflow of lymph.

For ordinary use the best application will be a 5 per cent. solution of common salt combined with ½ per cent. citrate of soda to render the lymph incoagulable. Where citrate of soda, or a similar decalcifiant, is not available a simple 5 per cent. solution of salt will serve. Sea water, this being equivalent to a 2·5 per cent. solution of salt, may also be employed. In dealing with dry and infiltrated wound surfaces stronger solutions of salt (up to 10 per cent.) will be found to resolve the induration and to clean up the wound surfaces much more quickly than weaker solutions.

In the case of deep wounds the simplest procedure will be to pour in the hypertonic solution and then plug lightly with gauze. Superficial wounds may be dealt with by laying on gauze thoroughly soaked in the solution. The limb should then be wrapped in waterproof material to prevent the bed becoming soaked with the very copious discharge, and an application of vaseline will prevent irritation of the skin and stinging on freshly cut skin surfaces.

The "drawing agent" has done its work as soon as it has checked the spreading invasion of the tissues or has cleaned up the dry and indurated wound surface, and this last has clothed itself in bright coral red granulations. The hypertonic salt solution may then be replaced by some simple dressing (*vide* the final paragraph of this Memorandum).

V.—TREATMENT OF THE SUPPURATION WHICH WILL SUPERVENE UPON THE LAYING OPEN OF WOUNDS AND INFECTED TISSUES.

The laying open of the wound or the infected tissue effects, as consideration will show, only the conversion of a more into a less dangerous form of infection, and we are, after our operative procedures, faced with a suppurative infection of our open wound and of our superadded incisions, and have now to check that infection.

It will in practically every case be an infection by the streptococcus combined with staphylococcus. And in very many cases there will be a superadded infection by coliform organisms, in particular by the bacillus proteus.

The therapeutic methods which we have here at disposal are the following:—

(1) *Provision of Satisfactory Drainage and Lymph Lavage.*

The first and most important thing will be to provide in the dependent portion of the wound a free outlet for the discharges and to secure, when we are dealing with infiltrated wound surfaces, a free outflow of lymph (*vide* Section IV.).

If, by either of these methods or by a combination of the two, we succeed in providing effective lymph lavage for our wound, we shall have very little difficulty with the infection.

But it will in a very large proportion of cases be quite impracticable to obtain all that would be desirable in the matter of drainage, and it is all-important to recognise in connexion with these cases that "conservative surgery," as applied to the wounded, means making, for the purpose of conserving a limb, legitimate sacrifices with respect to drainage. The question, and it is the most anxious and responsible question in all surgical procedures, as to how far one may sacrifice drainage, can only be arrived at by balancing in each particular case the advantage of preserving a limb against the risks of long-continued suppuration and eventual septicæmia.

We require here to have clear conceptions as to what amount of help is obtainable, on the one hand, from *vaccine-therapy*, from the employment of *antiseptics* in the wound, and from *frequent dressings*.

(2) *Vaccine-Therapy in its Application to Suppurating Wounds.*

It is important in connexion with this method of treatment to realise (*a*) that it aims at increasing the antibacterial powers of the blood, and (*b*) that the conditions which determine our success or failure are essentially the same when we employ vaccines as when we set ourselves to combat infections by the aid of the antibacterial power of the normal blood.

Ideally favourable conditions for the successful employment of a vaccine will be given when this is employed in treating a perfectly well-drained wound (let us say, such a wound as that furnished by a flapless amputation); or again, in treating an incursion of a microbe into a tissue where there is a very free lymph flow (let us say, such an infection as erysipelas). Here, by the use of an appropriate dose of the proper vaccine or vaccine mixture, successful results may be confidently expected.

The most unpromising cases for vaccine treatment are those where we are dealing with an unopened abscess sac, or a quite undrained wound, or an old-standing cicatrised tissue infection. Here the microbes are shut off from the blood fluids, and in these cases the utmost we have any right to expect is to prevent an extension of the infection and to ward off septicæmic complications.

In the case here specially in view, that of the imperfectly drained wound, we may expect to obtain by the repeated inoculation of the appropriate dose of the proper vaccine or vaccine mixture, not anything in the nature of dramatic results, but a certain improvement in the local conditions, together with a certain protection against septicæmia.

We may, in short, expect from vaccine-therapy results which will make it possible to employ conservative methods in a larger proportion of cases; to hold on longer to these methods; and to carry them oftener to a successful issue. It would therefore be advisable to carry out vaccine-therapy as part of the routine treatment of suppurating wounds. (*Vide* Instructions issued with Antisepsis Vaccine.)

(3) *Employment of Antiseptics in Wounds.*

It is notorious that the results of the treatment of suppurating wounds by antiseptics are disappointing, and that the reasoning which led to the universal adoption of this therapeutic method was, in point of fact, too unsophisticated.

It was tacitly assumed of chemical agents which acted as antiseptics in watery solution that they would do so also in blood fluids and pus; and that they would also penetrate a certain distance into the tissues and into blood clots. We know now that antiseptics do in these respects very much less than was anticipated.

It was further tacitly assumed that an antiseptic which gave good results with one particular microbe or group of microbes ought to give good results indiscriminately with all. But it is possible that particular antiseptics may be appropriate to particular microbes and groups of microbes: that, for instance, such an antiseptic as peroxide of hydrogen, which has very little effect on ordinary pyogenic microbes, may be specially effective on anaerobic micro-organisms.

But, at any rate, the principle has emerged that in choosing our antiseptics and the strength in which these are to be used we ought to guide ourselves by actual experiments on wounds and on the microbes which come into consideration in connexion with those wounds. And it would be clearly inadmissible in choosing antiseptics for employment in projectile wounds to leave out of sight the fact that anaerobic microbes and their spores have to be dealt with, and that the antiseptics we employ ought to be competent to kill these.

Again, it is still tacitly assumed by practically everyone who employs antiseptics that even if treatment with an antiseptic effects only a partial sterilisation, such partial sterilisation will always be something to the good.

This amounts in point of fact to the assumption that by substituting a smaller for a larger sowing the number of microbes in a culture will always be sensibly reduced.

In reality this will depend upon two factors: (*a*) the nature of the culture medium, and (*b*) the shorter or longer period allowed for the cultivation.

When we are dealing with a culture medium which is ideally favourable to the multiplication of microbes, the smaller sowing will, after a short space of time, give exactly the same number of microbes as the larger.

When we have a culture medium in which microbes develop very slowly the smaller sowing will for a very long time give a correspondingly smaller number of microbes.

When a cultivation medium which is unfavourable to microbes is after a certain lapse of time converted into a medium which is favourable to them, it will not be the larger or the smaller sowing, but the date at which the character of the fluid changes which will govern the result.

We have now to apply these general principles to the case of the cultivation of microbes in wounds; and we may consider first the evolution of events in wounds treated without antiseptics, and then inquire in what respect the use of antiseptics could modify this evolution.

There will after washing out remain behind in every wound a certain quantity of pus. In one case it will be a question of minimal collections left in the shallow depressions of a granulating surface; in another a question of quite large collections held up in inaccessible pockets.

This residual pus will furnish the sowing of microbes, and a culture will be set going as soon as lymph begins to trickle into the wound.

But the new culture will start off very slowly. And for two reasons: first, because the lymph in the condition in which it exudes inhibits nearly all microbial growth; secondly, because we have in the lymph phagocytically active leucocytes.

For a certain time these natural checks of microbial growths will be maintained. The conditions will, however, when the lymph is fouled by an appreciable mixture of residual pus, change rapidly. Phagocytosis will be arrested, and the effused lymph will be transformed into a medium which will be eminently favourable to the multiplication of all manner of microbes. If we now wait for only a few more hours we shall have in the wound a very luxuriant growth.

Coming now to the question how good could come of the employment of antiseptics in wounds, we recognise, in the first place, that we might by these means achieve an appreciably smaller sowing of microbes. Further, it is conceivable that if we were to leave behind in the wound a sufficiency of antiseptic we might obtain from it such a reinforcement of the growth-inhibiting power of the lymph as should more than offset the setback inflicted by the antiseptic in paralysing the phagocytic action of the leucocytes. Lastly, it is possible that an antiseptic, left behind in the wound in sufficient quantity, might prevent the residual pus converting the lymph into a good nutrient medium.

In reality these possibilities do not amount to much. It is clear that that appreciably smaller sowing of microbes which we are working for would be realised only where the whole wound surface can be thoroughly washed with an antiseptic. But these are precisely the cases where the effect of a smaller sowing of microbes would not make itself very much felt, for where the wound is left practically free of residual pus the natural checks of microbic growth would be longest maintained.

With regard to the other possibilities, all that is necessary to say is that they must rank only as possibilities, and that up to the present experiment has not furnished anything in confirmation of the idea that the introduction of antiseptics into wounds would be likely to contribute to the arrest of suppuration.

It must, however, be emphasised, in conclusion, that in the treatment of the wounded in hospital it is essential to look beyond the individual to the aggregate. And even if it were finally to emerge that the employment of antiseptics did not do anything towards the arrest of suppuration in an infected wound, the taking of careful antiseptic precautions, and the washing out of the wound by antiseptic solutions, would none the less be indispensable. For if such precautions were omitted, infective microbes would inevitably be carried from one wound to another, and there would inevitably, by such "passaging," be bred out in hospital very virulent strains of microbes, which would, as in pre-Listerian days, induce all manner of fatal septic infection.

(4) *Frequent and Efficient Dressing of the Wound.*

Coming back from this general consideration to the question of the treatment of the individual infected wound, it will be clear from what has been said above that the frequent and efficient washing out and dressing of the wound will be a factor of dominating importance in the treatment of the infection. Where comparatively long intervals intervene between the dressings, where pus is left behind in the wound, where the discharges are confined by plugs or multiple folds of dressing, and where, in the case of a deep wound, too small drainage-tubes are employed little or no progress will be made. Where large drainage-tubes are employed, where the wound is frequently washed out, where no pus is left behind, and where only a very light dressing is employed, we shall be making progress.

And clearly, so long as a wound is heavily infected, the ideal method of treatment, if only it were always practicable, would be immersion in a bath or continuous irrigation with some aseptic or mildly antiseptic fluid.

When the continuous bath or, as the case may be, lymph lavage induced by hypertonic salt solution has brought the infection under control, what remains of that infection may very often be extinguished by freely exposing the open wound to the air. The part which the drying off of the wound surfaces and the concentration of the discharges plays in the killing off of the residual microbes has not yet been investigated.

NOTE.—The recommendations with regard to surgery which are put forward in the Memorandum have been formulated in consultation with Colonel Sir B. Moynihan and Colonel F. F. Burghard.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Death of Captain John Esmonde, R.A.M.C., M.P.

Captain John Esmonde, Member of Parliament for North Tipperary, died on April 17th from pneumonia, after a few days' illness. He was the son of the late Mr. James Esmonde, J.P., of Drominagh, co. Tipperary, and was educated at Clongowes and Stonyhurst, and subsequently in the school of the Royal College of Surgeons in Ireland. He obtained the Licence of the College in 1884, and in 1891 he became a Licentiate of the Apothecaries' Hall. He practised in various districts in England for some 24 years and then returned to his native county. In 1910 he was elected to Parliament as a member of the Irish Nationalist Party. After the outbreak of the war he accepted a captain's commission in the Royal Army Medical Corps, and was given duty in Ireland. Though of late years his activities were rather political than professional, he did not lose his professional interests. During the passage of the National Insurance Act through the House of Commons he gave cordial help to his professional brethren, who will join with his political colleagues in regret at his early death. He was only 52 years of age.

The Women's National Health Association.

The annual conference of the Women's National Health Association was held last week in Dublin under the presidency of Lady Aberdeen. Discussions took place on the medical inspection of school children, infant mortality, and kindred subjects, and reports were submitted dealing with the various activities of the association.

Cerebro-spinal Meningitis.

Dr. A. Gardner Robb, medical superintendent of Purdysburn Municipal Fever Hospital, Belfast, has issued a circular to the medical practitioners of Belfast urging the importance of early serum treatment in cerebro-spinal meningitis. He appeals to them to send any cases they may wish to have treated in hospital at the earliest possible moment. He quotes Flexner's collected cases, which show that among those injected with serum between the first and third day of illness the mortality was 16·5 per cent., while if they were injected between the fourth and seventh day it was 23·8 per cent., and after the seventh day the mortality was 35 per cent. In 275 cases in the Belfast fever hospitals before the use of serum the mortality was 72·3 per cent. In 117 cases treated with the serum the mortality has been just under 24 per cent. In the present outbreak of cerebrospinal meningitis 24 cases were admitted from the city of Belfast; while some of these were sent in quite early, on an average they had reached, when admitted, the fourth day of the disease. Had they been all sent in early the death-rate, Dr. Robb thinks, would have been improved.

A Dispensary Doctor Volunteers.

The Ballymena board of guardians have decided to allow Mr. Alexander Duncan, L.R.C.P. & S. Edin., J.P., medical dispensary officer of Glenwherry district of the Ballymena union, to proceed for military duty at the seat of war, to keep his position open for him, and to pay for a locum-tenent during his period of service.

April 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Reform of the Sanitary Service in France.

THE Minister for War has made important reforms both in the personnel and in the organisation of the sanitary service. The region is divided into 21 districts, each of which will in future be under the care of an inspector-general. Dr. Février, who was director of the sanitary service of the trenches around Paris and who has been replaced by Médecin Inspecteur Dziewonski, has been appointed inspector-general of the 4th District at Mans. Dr. Vaillard, former director of the technical committee, has been appointed inspector-general of the Paris district. The Minister for War looks for increased efficiency of the services from this new organisation.

A Japanese Hospital in Paris.

A Japanese detachment of the Red Cross arrived in Paris some weeks ago under the charge of Professor Shiota. The Hotel Astoria in the Champs Elysées has been placed at his disposal. With great promptness 150 beds were installed and are tended by the 21 attendants who accompanied Professor Shiota. The inauguration ceremony was presided over by M. Troussaint, director of the sanitary service at the Ministry of War, accompanied by the Japanese Ambassador.

Window-blind Splints for Fractures.

Dr. Prestrelle, having occasion to put up a very large number of fractures in soldiers, has devised an emergency method for their reduction which has given him excellent results in securing the removal of the wounded to the ambulance or the field hospital with a minimum of suffering and danger from complications. Having frequently found it necessary to insert in the plaster casing, to increase its firmness, pieces of green window-blind (*stores verts*)—blinds, that is, composed of fine fibres of rush held together by latticed threads—it occurred to him to make use of them as splints (without using the plaster). While very rigid in the longitudinal direction they can be made to adapt themselves in the other direction to any surface as desired. With strong scissors they can be cut into the exact length and shape necessary. For a fracture of the leg, after an aseptic dressing of the wound, the limb is surrounded with a good layer of cotton wool, then a piece of blind extending two centimetres below beyond the heel and reaching above to the upper third of the thigh is applied. A roller bandage applied around the thigh to the top of the apparatus and a stirrup spiral wound round the foot secure immobility. For the thigh, in like manner, the blind material is cut so that it reaches the fold of the groin internally and the great trochanter externally, starting from the heel. In fractures of the thigh, when once the patient has been comfortably settled on the stretcher, Dr. Prestrelle attaches a weight or a brick to the foot by means of a cord passing over another cord joining the two handles of the stretcher. He has thus been enabled to keep for a day and a night at the dressing station wounded men with fractured thighs almost entirely free from suffering.

April 19th.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

THE annual meeting of the Governors and General Council of King Edward's Hospital Fund for London was held under the chairmanship of the SPEAKER of the House of Commons at St. James's Palace on April 19th, when the accounts and report of the General Council for the year 1914 were presented.

Sir SAVILE CROSSLEY read a letter from Lord Stamfordham in which the King expressed his deep sense of the loss sustained by the Fund in the death of Lord Rothschild, the honorary treasurer and chairman of the Finance Committee, and cordially approved of the action of the Governors in appointing Lord Revelstoke as Lord Rothschild's successor.

On the motion of the SPEAKER, seconded by Lord IVEAGH, a resolution expressing profound regret at the death of Lord Rothschild was unanimously carried.

The SPEAKER then announced the following appointments: The Hon. Algernon H. Mills, who was already on the Finance Committee, to be a member of the Council, and the Hon. Nathaniel Charles Rothschild to be a member of the Finance Committee, after which

Lord REVELSTOKE presented the accounts for 1914, which were unanimously adopted.

Sir SAVILE CROSSLEY submitted the draft report of the Council, which stated that the total receipts for the year 1914 were £529,885 14*s.* 3*d.*, of which £315,093 10*s.* 11*d.* were contributions to capital, and £214,792 3*s.* 4*d.* receipts on general account. The amount distributed was £140,000, as against £157,500 in the previous year. Although the total distributed was less than in 1913, there was an increase in grants in aid of the ordinary maintenance of hospitals, the reduction being wholly accounted for by a diminution in the claims on the Fund for building expenditure. This diminution was due to the postponement by the hospitals at the outbreak of the war of all schemes not actually in hand or particularly urgent. Of the sum of £140,000 distributed the hospitals received £133,500, the remaining £6500 being distributed amongst consumption sanatoriums and convalescent homes taking London patients. The £133,500 allotted to the London hospitals was directed to be applied as follows: £108,550 to general purposes and maintenance, £12,600 towards the liquidation of debts on maintenance account, and £12,350 for additions and improvements to hospitals and their equipment. Of the £6500 given to consumption sanatoriums and convalescent homes, £3800 were allotted in consideration of the allocation of beds for patients to be sent from certain London hospitals. Since the foundation of the Fund a total amount of

£1,930,416 8*s.* 5*d.* has been distributed—an average annual distribution of £107,245 7*s.* 2*d.* The contribution of the League of Mercy this year had again reached £14,000. With regard to the future needs of the Fund, the report states that the sum required to be raised during the year, after taking into account income from investments, in order to maintain the distribution of £140,000, will be nearly £60,000; while to reach again the distribution of the three previous years more than £75,000 must be obtained in the year by means of annual subscriptions, donations, and legacies. The total amount received from annual subscriptions and donations during 1914 showed, as compared with 1913, a decrease of £750, while the receipts from legacies (other than the Lewis and Harman bequests) were £19,525 less than the previous year, or £6223 less than the average of the five years 1909 to 1913. The nation, the report continues, will surely realise that the work done by the hospitals, both in the treatment of the wounded and in the providing and training of doctors, nurses, and administrators in the medical service of the army and navy, gives them a special claim on the generosity of the public. The Council view with great satisfaction the successful amalgamation of the Hospital for Diseases of the Throat, Golden-square, and the London Throat Hospital, Great Portland-street.

The SPEAKER moved the adoption of the report, which was seconded by Dr. FREDERICK TAYLOR, the President of the Royal College of Physicians of London, and adopted unanimously.

Other business having been transacted, the meeting terminated.

THE MEDICAL MAN'S INCOME-TAX.

As the season has arrived for the completion of the annual income-tax return, this year to be the basis of a charge at the highest rate ever imposed, the moment is opportune for an explanation of the manner in which the sum to be returned by the practitioner should be arrived at. Official instructions are, it is true, issued with the forms, but to the average professional man they appear to be designed to meet every case but his own.

Repayment of Excess Tax.—Calculation of "Earnings."

It may be remarked in the first place that the past year, 1914-15, is not a closed book so far as the tax is concerned if the profits of a practice have fallen from some cause connected with the war. In such a case an application for repayment of the excess tax may be made to the local surveyor of taxes; but tax will be repaid only on the amount by which the assessment exceeded the average of the profits of the three years, 1912, 1913, and 1914, unless the practitioner has himself been serving in connexion with the war, when the profits of the year 1914 will be taken. Service in connexion with the war includes for this purpose work abroad on behalf of the Red Cross Society, the St. John Ambulance Association, or similar body. In one other case also adjustment may be claimed—that is, where the profits have fallen on account of a change in the ownership of a practice or in the members of a partnership.

The sum to be returned under "Schedule D" is, broadly speaking, the amount of the earnings of the practice after deducting the professional expenses, on the average of the three years 1912, 1913, and 1914 (which may be taken as ending on Dec. 31st, 1914, March 31st, 1915, or other date before March 31st, to which the accounts are usually made up). The "earnings" should in strictness be the fees arising in the course of each year, but it is a recognised custom to take the more convenient basis of the sums actually received each year, a system which obviates the necessity of entering into questions as to the amount of bad debts. It is only in the case of new practices, where the receipts in the first two or three years are not a proper index of the earnings in those years, that the revenue authorities take exception to this system. Where public appointments are held as an addition to a practice a separate return for each under "Schedule E" is usually called for on a blue form, but it is not necessary to make these separate returns if the profits from the appointments are included in the general return of average profits. This course renders unnecessary not only the completion of several returns, but also the separate calculation of expenses for each office and payment of tax on separate assessments, perhaps to various collectors; but care should be taken to send back the blue forms with a note of the address from which the inclusive return has been made. Under this system the income from a new appointment is not returned until it comes into the three years taken for an average. Sums received under the National Insurance Act are in any case regarded as ordinary receipts of the practice.

Expenses.

The expenses that may be deducted from the profits of each year may be summarised as follows:—

Rent, rates, and taxes.—The full amount for premises not used as a dwelling, and up to two-thirds where only partly used for professional purposes. If the practitioner is the owner of his house two-thirds of the income-tax valuation (Schedule A) should be deducted in lieu of rent. Inhabited-house duty may be included in the "taxes," but not income-tax.

Car and carriage expenses, including upkeep, repairs, petrol, licence, car insurance, garage and stable expenses, harness, fodder, veterinary surgeon's bill, and also the cost of replacing car, carriage, or horses. The cost of replacement is required to be based on the sum originally paid for the article replaced unless the sum paid for renewal be less.

Salaries, wages, and board of assistants, chauffeur or coachman, domestic servants, and other employees. In the case of servants occupied partly in household duties an apportionment should be made. The cost of board is usually taken at about 10*s.* a week and where an outside lodging is provided for any servant the actual expense incurred should be added.

House expenses, including fuel, lighting, repairs, decorations, &c. In the ordinary case it will be necessary to estimate the proportion of these expenses properly attributable to the portion of the house used for professional purposes.

Sundry expenses.—Insurance of servants (employer's liability and Government insurance), special travelling expenses, cost of instruments, books, professional papers, telephone, postages, stationery, and other incidental expenses.

Locum-tenents.—Sums paid to locum-tenents are usually allowed where the recipient is exempt from income-tax or makes his own return, but the expense is frequently disallowed when incurred for the purpose of taking a holiday.

Among the outgoings that are not allowed in computing the profits may be mentioned the purchase of a practice, whether in one sum or by instalments, annuities paid to former practitioners or their widows, sums expended in the setting up of a practice or in the extension of premises, the cost of a first car or carriage, interest on loans, life or sickness assurance premiums, voluntary subscriptions, and, generally expenses not incurred for professional purposes. It is to be observed, however, that in the case of interest and annuities income-tax should be deducted from the payments, so that these outgoings are in effect allowed, and life assurance premiums are treated as a deduction from the assessment. Bank interest on a loan for professional purposes is an exception to the general rule for interest and may be charged as an expense. No sums drawn in the way of salary or interest on capital may be deducted, such sums being regarded as part of the income.

The question of an allowance for the yearly depreciation of motor-cars is a somewhat sore point. The revenue authorities, taking advantage of the fact that the Act allowing depreciation was passed at a time when the use of "machinery" in connexion with a profession (as distinct from a trade) was not contemplated, refuse to make any allowance under this head to others than traders. It is therefore only by means of charging the cost of replacing the car when worn out that the practitioner can in effect obtain reduction on account of the decrease in value year by year.

A further article will deal with the various descriptions of relief that may be claimed and with the manner in which the form of return should be completed to insure all allowances that may be due.

(To be concluded.)

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned have been granted temporary commissions as Staff-Surgeons in His Majesty's Fleet:—Dated April 14th: Arthur Edmunds. Dated April 15th: Charles Harley Savory and John Greenlaw Dobson. Dated April 16th: Ralph Burn Boston and Charles Joseph Thompson.

The undermentioned has been granted a temporary commission as Surgeon in His Majesty's Fleet: William Leckie Coullie (dated April 12th).

The following appointments have been notified:—Temporary Surgeons: W. L. Coullie, G. R. Stathers, and C. H. Savory, all to the *Victory*, additional, for Haslar Hospital; G. R. T. Thomson and J. G. Dobson to the *Pembroke*, additional, for Chatham Hospital; and R. B. Boston and C. J. Thompson, both to the *Vivid*, additional, for Plymouth Hospital.

ROYAL ARMY MEDICAL CORPS.

The undermentioned temporary Lieutenants to be temporary Captains: Augustus W. Addinsell, Leonard B. Cane, late Captain, Royal Army Medical Corps, Territorial Force Reserve.

Temporary Lieutenant Frederick J. Stephenson relinquishes his commission (dated April 3rd).

ARMY SERVICE CORPS.

Lieutenant Ernest A. Greenwood, Royal Army Medical Corps (Territorial Force), to be temporary Lieutenant.

INDIAN MEDICAL SERVICE.

The King has approved the promotion of the following officers:—Majors to be Lieutenant-Colonels: Dated Jan. 29th: Algernon Francis Stevens, Clement Henry Bensley, Francis Hammond Watling, Brevet Lieutenant-Colonel Frank Wall, Charles Montague Mathew, John Stephenson, Frank Needham Windsor, Ernest Edwin Waters, Asher Leventon, Arthur Frederick William King, Robert Frazer Standage, Andrew Armstrong Gibbs, Edmund Moritz Illington, and Charles George Webster.

The King has approved the retirement of the undermentioned officer: Major Walter Hulbert Cox, D.S.O.

TERRITORIAL FORCE.

Army Medical Services.

Major Frederick R. Miller, from 3rd London General Hospital, to be Deputy Assistant Director of Medical Services, 2nd London Reserve Division.

Royal Army Medical Corps.

1st South Midland Field Ambulance: Edmund Whichello to be Lieutenant.

3rd West Riding Field Ambulance: Captain William S. Kerr to be temporary Major.

3rd London General Hospital: Wilfred Batten Lewis Trotter and Hugh Morrison Davies to be Captains, whose services will be available on mobilisation.

1st Northern General Hospital: The undermentioned to be Lieutenants: Norman Hodgson, Frederick John Nattrass, Thomas Whitelaw, and Sydney Thompson.

2nd Southern General Hospital: The undermentioned to be Captains, whose services will be available on mobilisation: John Alexander Nixon (late Captain of this Unit), John Roger Charles (late Lieutenant, 1st South Midland Brigade, Royal Field Artillery), Charles Ferrier Walters (late Lieutenant, 3rd South Midland Field Ambulance), Clifford Arthur Moore, Arthur Rendle Short, and Arthur Launcelot Flemming (late Major of this Unit).

2nd London Sanitary Company: Sidney Herbert Daukes to be Lieutenant (dated March 2nd, 1915).

East Anglian Casualty Clearing Station: Major Francis J. Warwick, from Attached to Units other than Medical Units, to be Major, with precedence as in the Territorial Force.

West Riding Casualty Clearing Station: The undermentioned Lieutenants, from the 2nd West Riding Field Ambulance, to be Lieutenants (dated Dec. 31st, 1914): Robert G. Dixon and Hubert W. Symons.

2nd Northumbrian Field Ambulance: William Arthur Benson (late Captain, 8th Battalion, The Durham Light Infantry) to be Lieutenant-Colonel (temporary). John Percy Race to be Lieutenant.

3rd Northumbrian Field Ambulance: Captain Arthur Tinley Sissons, from the Territorial Force Reserve, Royal Army Medical Corps, to be Captain (temporary).

3rd London General Hospital: The undermentioned to be Captains, whose services will be available on mobilisation: Gwynne Evan Owen Williams and Charles Aubrey Pannett.

Eastern Mounted Brigade Field Ambulance: Captain Claudius G. K. Sharp to be temporary Major.

Highland Mounted Brigade Field Ambulance: David Dunn Mackay to be Lieutenant.

3rd Lowland Field Ambulance: George James Linklater to be Lieutenant.

3rd South Midland Field Ambulance: David McVea Fleck to be Lieutenant.

1st Eastern General Hospital: Major Laurence Humphry to be temporary Lieutenant-Colonel.

1st London (City of London) General Hospital: William Farrer Thompson to be Lieutenant.

4th London Field Ambulance: Major Mowbray Taylor, from the 5th London Field Ambulance, to be Lieutenant-Colonel (temporary).

Sanitary Service: Captain Robert Proudfoot, from Attached to Units other than Medical Units, to be Sanitary Officer, Welsh Territorial Division. Frederick Thomas Churchill Linton to be Captain, whose services will be available on mobilisation.

North Midland Casualty Clearing Station: Henry Crook Bevan to be Lieutenant.

Attached to Units other than Medical Units.—To be Lieutenants: Robert Lucius Wood, Lieutenant John S. Hall, from the 3rd West Riding Field Ambulance, and Sidney Hughes.

DEATHS IN THE SERVICES.

Surgeon-General Aylmer Martin Crofts, C.I.E., I.M.S., suddenly, at the Naval and Military Hotel, London, on April 12th. He was born in 1854, and was the son of George Crofts, Esq., of Temple Hill, Blackrock, Cork. He qualified as L.R.C.S. Edin. in 1876 and L.R.C.P. Edin. in 1877, and entered the Indian Medical Service in the same year. He served in the Afghan War of 1878–80 (obtaining the medal), the Egyptian War of 1882 (gaining the medal with clasp and receiving also the Khedive's star), and in the Zhob Valley Expedition of 1884. In 1886 he was appointed residency surgeon at Gwalior, and the young Maharajah was placed in his charge. During the China Expedition of 1900–01 he was senior medical officer of the hospital ship *Gwalior*. In 1905 he became agency surgeon at Kotah and Thalawar, and later in the year he was appointed to the North-West Frontier Provinces. In 1900 he received the C.I.E.; he was also an Honorary Associate of the Order of St. John of Jerusalem.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 9540 births and 6618 deaths were registered during the week ended Saturday, April 17th. The annual rate of mortality in these towns, which had increased from 19·3 to 19·9 per 1000 in the four preceding weeks, fell, in the week under notice, to 19·0 per 1000 of their aggregate population, estimated at 18,134,239 persons at the middle of last year. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 19·6, against a corresponding rate of 20·6 per 1000 in London. Among the several towns the death-rate last week ranged from 9·0 in Wallasey, 9·5 in Edmonton, 10·2 in Enfield, 10·4 in Walthamstow, and 10·5 in Darlington, to 26·2 in Wigan, 26·7 in Carlisle, 26·8 in Middlesbrough, 29·5 in South Shields, and 30·8 in West Hartlepool.

The 6618 deaths from all causes were 304 fewer than the number recorded in the previous week, and included 736 which were referred to the principal epidemic diseases, against 826 and 767 in the two preceding weeks. Of these 736 deaths, 426 resulted from measles, 151 from whooping-cough, 63 from infantile diarrhœal diseases, 55 from diphtheria, 28 from scarlet fever, 11 from enteric fever, and 2 from small-pox. The mean annual death-rate from these diseases was equal to 2·1, against 2·2 per 1000 in the previous week. The deaths attributed to measles, which had been 397, 495, and 452 in the three preceding weeks, further declined to 426 last week, and caused the highest annual death-rates of 3·3 in Wolverhampton, 3·6 in Salford, 3·9 in Walsall, 4·0 in West Hartlepool, 4·3 in Merthyr Tydfil, 4·6 in Northampton, 5·3 in Coventry, 5·9 in Hornsey and in Carlisle, and 8·3 in West Bromwich. The deaths referred to whooping-cough, which had been 127, 157, and 167 in the three preceding weeks, fell to 151 last week; the highest recorded death-rates from this cause were 1·2 in Blackburn, 1·7 in Southampton, 1·8 in Merthyr Tydfil, 2·1 in Bootle, 2·4 in West Hartlepool, 2·5 in Tynemouth, 2·9 in Barnsley, 3·0 in Carlisle, and 6·8 in Wigan. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 70, 77, and 67 in the three preceding weeks, further fell to 63 last week, and included 18 in London, 4 each in Liverpool and Manchester, and 3 each in Birmingham, Oldham, and Middlesbrough. The deaths attributed to diphtheria, which had been 58, 69, and 49 in the three preceding weeks, rose to 55, of which 12 occurred in London, 4 each in Birmingham and Liverpool, and 3 in Manchester. The deaths referred to scarlet fever, which had been 31, 16, and 25 in the three preceding weeks, further rose to 28 last week, and included 9 in London, 3 in Liverpool, and 2 each in Oldham and Preston. The fatal cases of enteric fever, which had declined from 15 to 7 in the five preceding weeks, rose to 11 last week, of which 2 were recorded in Plymouth and 2 in Salford. The 2 deaths from small-pox were registered in Bristol.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily declined from 5036 to 2505 in the 20 preceding weeks, had further declined to 2422 on Saturday last; 263 new cases were admitted during the week, against 301, 253, and 275 in the three preceding weeks. These hospitals also contained on Saturday last 1281 cases of diphtheria, 378 of measles, 621 of enteric fever, and 16 of whooping-cough, but not one of small-pox. The 1761 deaths from all causes in London were 63 fewer than in the previous week, and corresponded to an annual death-rate of 20·3 per 1000. The deaths referred to diseases of the respiratory system, which had been 481, 475, and 466 in the three preceding weeks, rose to 469 in the week under notice, and were 206 in excess of the number in the corresponding week of last year. The deaths from influenza numbered 39, against 65, 45, and 46 in the three preceding weeks.

Of the 6618 deaths from all causes in the 96 towns 198 resulted from different forms of violence and 436 were the subject of coroners' inquests, while 1849 occurred in public institutions. The causes of 51, or 0·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Sheffield, Leeds, Bristol, Bradford, and in 51 other smaller towns. Of the 51 uncertified causes, 9 were registered in Birmingham, 8 in Liverpool, 3 each in Manchester and Gateshead, and 2 each in Bury, Hull, Sunderland, Newcastle-on-Tyne, Tynemouth, and Carlisle.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,212,380 persons at the middle of this year, 701 births and 515 deaths were registered during the week ended Saturday, April 17th. The annual rate of mortality in these towns, which had been 23·9, 22·9, and 23·8 per 1000 in the three preceding weeks, fell to 22·1 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 25·4, against corresponding rates of 19·6 and 22·4 per 1000 in the English and Scotch towns respectively. The death-rate last week was equal to 24·1 in Dublin (against 20·3 in London and 22·1 in Glasgow), 21·5 in Belfast, 25·8 in Cork, 12·7 in Londonderry, 13·5 in Limerick, and 22·8 in Waterford, while in the 21 smaller towns the mean rate was 21·7 per 1000.

The 515 deaths from all causes were 38 fewer than the number in the previous week, and included 30 which were referred to the principal epidemic diseases, against 37 and 40 in the two preceding weeks. Of these 30 deaths, 11 resulted from whooping-cough, 5 each from measles, scarlet fever, and infantile diarrhœal diseases, 3 from diphtheria, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·3, against 2·1 per 1000 in the large English towns. The deaths attributed to whooping-cough, which had been 16, 13, and 15 in the three preceding weeks, fell to 11 last week, and included 5 in Belfast and 4 in Dublin. The deaths referred to measles, which had been 12, 7, and 16 in the three preceding weeks, declined to 5 last week, of which 3 were recorded in Belfast. The 5 fatal cases of scarlet fever were slightly in excess of the average in recent weeks, but showed no excess in any particular town. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 11, 11, and 3 in the three preceding weeks, rose to 5 last week, and comprised 3 in Dublin and 2 in Belfast. The fatal cases of diphtheria were registered in Dublin, Belfast, and Dundalk respectively, and that of enteric fever in Belfast.

The deaths referred to diseases of the respiratory system, which had been 145, 121, and 158 in the three preceding weeks, fell to 119 in the week under notice. Of the 515 deaths from all causes, 159, or 31 per cent., occurred in public institutions, and 10 resulted from various forms of violence. The causes of 15, or 2·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the large English towns the proportion of uncertified causes did not exceed 0·8 per cent.

THE Hospital for Consumption and Diseases of the Chest, Brompton, at which special arrangements have been made for the admission of sailors and soldiers of the Allied Forces suffering from consumption, has received a special donation of £1000 from a gentleman who desires to remain anonymous.

Correspondence.

"Audi alteram partem."

ACHOLURIC JAUNDICE.

To the Editor of THE LANCET.

SIR,—The interesting case of acholuric jaundice reported by Dr. W. Harmens in your issue of April 10th (in which it is to be hoped that removal of the spleen may be attended with permanent relief) is doubtless characterised by the usual difficulties which such cases present. In connexion with Dr. Harmens's case, one may well consider the case of Dr. T. R. C. Whipham, fully described in THE LANCET of Nov. 21st, 1914. In Dr. Whipham's case there was bile pigment in the urine and an absence of urobilin, and owing to this exceptional circumstance Dr. Whipham thinks the name of the affection ought to be altered. Now the recent experimental work of Whipple and Hooper[1] seems to have solved one of the main difficulties in connexion with these perplexing cases. These investigators have proved that hæmoglobin can be transformed into bile pigment in the circulation and a true hæmatogenous jaundice induced. Those interested may refer to the original paper. Briefly put, after the production of an Eck fistula and ligation of the hepatic artery, the hæmoglobin of red cells injected into the blood is rapidly changed into bile pigment. When the liver, spleen, and intestines were shut out from the circulation, and a head and thorax circulation only existed, the same thing occurred. The authors consider that the endothelial cells of the blood vessels and other organs can transform the hæmoglobin into bile pigments. In "acholuric" jaundice, therefore, the presence or absence of pile pigment in the urine is non-essential and depends on the amount in circulation.

These observations not only throw some light on acholuric jaundice, but they clear up certain doubts in regard to hæmatogenous jaundice in general. I may perhaps be excused in mentioning that in 1896 I upheld by experimental work the theory of a hæmatogenous jaundice in a paper read before the British Medical Association.[2] I showed that in certain cases the liver might be rendered incapable of secreting bile, but that bile pigments were nevertheless found in the urine, and traced these pigments to hæmolysis by the spleen. The hæmolysis in acholuric jaundice is probably brought about by disturbance of the lipoid envelope of the red corpuscle by a toxic or emulsifying substance, present in the spleen.

I am, Sir, yours faithfully,

Harley-street, W., April 12th, 1915. A. G. AULD.

MENINGOCOCCUS AND DIPHTHERIA CARRIERS.

To the Editor of THE LANCET.

SIR,—With reference to the collection of material from the naso-pharynx uncontaminated by oral organisms, this can be readily made by using a post-nasal cannula which I introduced many years ago and find to be of much practical value.

It consists of glass tubing (10 mm. diameter) bent at a right angle to admit of passage below soft palate into the post-nasal space. Through it a wire charged with wool can easily be passed. It is quickly and cheaply made by bending a length of glass tubing in the gas flame and then cutting to the desired length (long arm 6 in., short arm ¾ in.) A tongue depressor will help, but it is not essential with an intelligent patient. If used, it may either be removed after introducing the cannula or transferred to the patient's hand. Should the patient prove to be "intolerant" a slight preliminary application of cocaine to the faucial ring is advisable. A drawing of the cannula will be seen in "Diseases of the Ear," Milligan and Wingrave, p. 58 (Macmillan, 1911).

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[1] Journal of Experimental Medicine, June 1st, 1913, p. 612.

[2] Brit. Med. Jour., vol. i., 1896, p. 137.

The present importance of the matter is my only reason for drawing attention to a very simple method which personal experience has proved to be of the greatest assistance in identifying meningococcus and diphtheria carriers.

I am, Sir, yours faithfully,
WYATT WINGRAVE, M.D. Durh.,
Pathologist, Central London Throat and Ear Hospital.
Bloomsbury-square, W.C., April 14th, 1915.

STOMACH *V.* HEART IN RELATION TO PRÆCORDIAL PAIN AND SUDDEN DEATH.

To the Editor of THE LANCET.

SIR,—I have read with interest Sir Clifford Allbutt's letter in THE LANCET of April 17th in which he suggests that the case described by Dr. Edgar Lea is "one of syphilitic aortitis with angina and needs no particular 'segmental' or other 'neurosis' to explain it." He speaks of the algesic symptom as of "no clinical use." But algesia, which Sir Clifford Allbutt dismisses as of "no clinical use," has, I think, a way of cropping up in every case of the angina pectoris. In cases in which at first sight I have thought it to be absent, it has revealed itself on closer examination or at a later time. Moreover, the symptom displays distinctive peculiarities. It is fitful in its incidence. One day it apoears at the epigastrium, upon another in cervical or brachial regions, and on a third perchance in isolated patches scattered over superficial and deep structures of the thoracic walls. Sometimes the symptom is accompanied by rigidity of muscle and pain, at other times it appears alone. Certain authorities agree in regarding intercostal algesia which appears in connexion with gastro-intestinal troubles as indicating the existence of foci of irritation at spinal centres. Among these I may mention Dr. Head, Dr. James Mackenzie, Dr. Hertz, Sir Bertrand Dawson, and, as a pioneer in this subject, Professor Langley. Further, in the case of the angina pectoris Dr. James Mackenzie and the late Professor G. A. Gibson have referred to the neurosis as secondary to myocardial disorder and as produced by it.

The object of my letter in your issue of April 3rd was to suggest that sufficient grounds exist for singling out this fitful neurosis as the predisposing cause of the angina pectoris and for ascribing it to long-continued gastro-intestinal hypertension or irritation. In this scheme of causation myocardial disturbance is regarded as of secondary significance and as indeed occupying the status of an attendant symptom, or at most that of a remote causal factor, perchance operative in a limited proportion of cases.

I am, Sir, yours faithfully,
H. WALTER VERDON.
Streatham Hill, S.W., April 19th, 1915.

CEREBRO-SPINAL MENINGITIS: MENINGOCOCCI FOUND IN PERIPHERAL BLOOD FILMS.

To the Editor of THE LANCET.

SIR,—I read with interest in your issue of April 10th the account by Dr. Alfred C. Coles of a case of cerebro-spinal meningitis of septicæmic type. What struck me was the absence in this account of any definite evidence that this case was really one of meningococcal infection. From the clinical point of view the report states that there were "no signs or symptoms to indicate the presence of meningitis." The cytological and bacteriological examination of the cerebro-spinal fluid was negative as far as the meningococcus was concerned. The examination of blood films (blood cultures are not mentioned) revealed the presence of cocci morphologically resembling gonococci, but no mention is made of any distinctive staining method having been used as a means of helping in the identification of the cocci; and I have noticed that cocci, such as ordinary staphylococci, which appear as circular cocci if stained by Gram's method with aniline-oil-gentian-violet, often appear as "bean-shaped" cocci, resembling gonococci, when stains of the Giemsa type are used.

When an account of the various forms of meningococcal infection that have occurred during the present epidemic of the disease comes to be written, such cases as the one under consideration will perhaps be cited as evidence of blood-stream infection with the meningococcus, although the clinical and bacteriological evidence brought forward may leave much to be desired, and may falsify statistics for which they may be used. It is obviously desirable, then, that in reporting such cases well-recognised reactions of the organism should as far as possible be looked for and reported on as positive or negative.

I am, Sir, yours faithfully,
E. L. HUNT.
Bacteriological Laboratory, St. George's Hospital, S.W., April 16th, 1915.

CERTAIN PECULIAR CRYSTALS FOUND IN CEREBRO-SPINAL FLUID.

To the Editor of THE LANCET.

SIR,—In your issue of April 3rd a letter from Mr. Ernest H. Shaw appeared in reference to my article on the above subject. In this letter he affirms that these crystals were altogether extraneous, and could be obtained by boiling tap water, allowing it to cool, and examining the deposit. He then goes on to state that in "films stained with carbol-fuchsin for tubercle bacilli the crystals retain some of the stain." The crystals I described (as I pointed out) are readily soluble in dilute acids, and therefore on examining a film after the usual Ziehl-Neelsen technique no trace whatever of the crystals remains. I have, naturally, in the ordinary course of my work boiled many bottles, syringes, centrifuge tubes, &c., in tap water, but never have I found as a result crystals at all comparable to those I have described, nor have they previously been seen by any pathologist to whom I have shown them.

It is rather strange that in the same week as the article appeared in THE LANCET I again found identical crystals in a specimen of cerebro-spinal fluid removed by Professor Thomas Sinclair, of Belfast. After reading Mr. Shaw's letter I thoroughly washed the cork and bottle in which the cerebro-spinal fluid had been sent to me and asked Professor Sinclair to sterilise these again, which he did, using the same technique—water from the same tap and the same steriliser. I centrifugalised the contents of the bottle, but no crystals were found.—I am, Sir, yours faithfully,

Belfast, April 15th, 1915. W. W. D. THOMSON.

DIFFICULT LABOUR AND DENTAL DEFORMITIES.

To the Editor of THE LANCET.

SIR,—I have been for some time past investigating the relationship of difficult labour to dental deformities, and I am wondering whether you would allow me through your columns to appeal for assistance to your wide circle of readers. The cases of particular interest are those of delayed labour in face presentation, breech presentation, and delivery by forceps. I should be grateful for the details of such cases together with models of mouth showing the occlusion of the teeth.

I am, Sir, yours faithfully,

11, Queen Anne-street, W., April 18th, 1915. J. F. COLYER.

THE INHALATION OF CHLOROFORM IN BRONCHIAL CATARRH.

To the Editor of THE LANCET.

SIR,—During the past winter I have been called upon to treat a great many cases of post-influenzal bronchial catarrh accompanied by very troublesome cough occurring in violent paroxysms which are very exhausting for the sufferer. I find that a single deep inhalation of chloroform (from the bottle for instance), retained for a few seconds, almost invariably allays the sensation of tickling in the throat and secures immunity from recurrence for a certain period. I have extended this treatment to cases of phthisis and I find that here too the whiff of chloroform exerts a manifestly sedative action. The method is so simple and so effectual that I commend it for a trial, especially as there does not seem to be any drawback to this application of chloroform. I may mention incidentally that in cases where the cough shows a tendency to become troublesome as soon as the patient goes to bed it can often be cut short by lying prone for a minute or two, after which the lateral decubitus is cautiously resumed.

I am, Sir, yours faithfully,

ALFRED S. GUBB, M.D.Paris.

Aix-les-Bains, Savoie, April 13th, 1915.

CLASSICAL CORRECTNESS.

To the Editor of THE LANCET.

SIR,—I am glad that your reviewer, in his gratifying notice in your last issue of my "Index of Symptoms" agrees to the necessity for a word to express "reflexes" which have no connexion with the reflex arc; but I still prefer parergia to parergon. I have a great regard for classical correctness, and claim a large share in consigning to the lethal chamber that horrible mongrel uricacidæmia.

Parergia is formed on the same lines as synergia, and I am sure that had they felt a need for the word, the Greeks, who made *συνεργία* from *σύν* and *ἔργον*, would not have hesitated to make *παρεργία* from *παρά* and *ἔργον*.

I am, Sir, yours faithfully,

RALPH W. LEFTWICH.

Ebury-street, S.W., April 17th, 1915.

"UNPATRIOTIC DOCTORS."

To the Editor of THE LANCET.

SIR,—At the request of some of my clients who have seen a letter in the lay press, with this title, complaining of the lack of patriotism evinced by certain members of the profession, may I, as one with 40 years' experience in the engagement of locum-tenents for medical men, say a word in reply to the complaints. Before the war broke out the fees for substitutes were mostly 5 and 6 guineas, the increase in a great measure being due to the extra amount of work involved and the higher incomes earned owing to the Insurance Act. When the War broke out a large number of those who had been acting as locum-tenents at once offered their services and were accepted and given commissions at a remuneration of, roughly, 7 guineas a week, and consequently the fees paid to those remaining automatically went up to about the same figure, and at the present time a large number of men unable from one cause or another to serve their country abroad are doing so by taking duty at home for those who have gone on active service, and at moderate fees. Personally, I have not come across a single instance of 12 guineas being paid, and my register shows that out of a list of over 600 engagements that have passed through my hands during the last six months (mostly war ones) no fewer than 300 have been at 6 guineas, 235 at 7 guineas, 16 at 8 guineas, and the remainder at lower fees on hospitality terms, &c.

As regards the suggestion to invite those willing to help at reasonable rates of remuneration, I may say that early in the war through letters in the medical papers I invited all able and willing to help to communicate with me, and have met with a most loyal response from medical men up to 70 years of age who are doing their best in their country's need. Many of our allies are also helping, including Egyptians, Indians, Belgians, French, Russians, Japanese, and Greek.

I am, Sir, yours faithfully,

PERCIVAL TURNER.

Adam-street, Adelphi, W.C., April 19th, 1915.

MEDICAL INSPECTION OF SCHOOLS: ANNUAL REPORT OF THE MEDICAL OFFICER TO THE ABERDEEN SCHOOL BOARD.—In his fifth annual report Dr. George Rose, medical officer to the Aberdeen School Board, points out the significance of the coincidence of the advent and growth of picture palaces with an increase of scarlet fever and diphtheria cases. With regard to a recent outbreak of diphtheria, Dr. Rose states that neither the social position of the scholars, the site of the school, nor the ventilation nor method of heating had the slightest influence upon the disease. Among the children attending the public schools from 8000 to 10,000 have five or more teeth absent or decayed, and 27,000 are in need of dental treatment; and apart from the children dealt with at the dental clinic not over 1 per cent. probably will receive conservative dental treatment. Children fed on tea and bread are found to have the worst teeth, while the common statement that oatmeal feeders have worse teeth than others is at variance with the figures obtainable, which support the opposite view. Dr. Rose finds that tea is doing much harm among the young people. Extreme cases of tea-fed children can be picked out infallibly in the course of medical inspection. The lack of subcutaneous fat in the face, the faint lines running from the nose to the chin round the angles of the mouth, the half-frightened air, all tell, he says, of tea-poisoning, and form a type as patent to the skilled observer as is the alcoholic. Not many children suffer from lack of food, but in many cases the quality is unsatisfactory. Though most children are born healthy, there is a large infant mortality due largely to gastric disorders. This is followed in many of the survivors by rickets, the result of improper feeding. Most, if not all, of these disordered conditions are preventable.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

THE EXECUTIVE COMMITTEE.

A MEETING of the Executive Committee was held on April 15th, when the treasurer, Dr. Des Vœux, reported upon the financial position of the Fund, and presented the audited statement of accounts up to March 31st last given below.

Relief since March 31st has been granted in several directions, particulars of which were furnished, and clothes continue to be purchased in suitable cases, the outlay in this direction being carefully scrutinised by Mrs. Colebrook.

It will be remembered that at the meeting of the Executive Committee held on March 25th it was unanimously agreed to send a substantial sum to Belgium to meet the urgent needs of Belgian doctors and pharmacists remaining in their own country. This course was adopted after the committee had received detailed information as to the cases, and as to the machinery for distribution which had been adopted by the Aide et Protection aux Médecins et Pharmaciens Sinistrés. A representative of this body attended the meeting of the Executive Committee, showed by documents the way in which the information as to the individual instances had been compiled, and spoke from personal knowledge both of the extremely sad plight of many of our Belgian *confrères*, and of the efficacy of the methods adopted by pharmaceutical inspectors, both in medical and pharmaceutical cases, for testing the correctness of the sad stories. On hearing this gentleman's statement the committee decided to act without delay; hitherto it had not been possible to send money because there was no official body ready to receive it or to account to the committee for its employment. The sum of money was despatched immediately to Belgium. It was sent through the medium of certain banks and with the help of Mr. Herbert Hoover, the chairman of the National Relief Fund, and an eloquent letter of thanks has been received from Dr. Pechère, the chairman of the Aide et Protection aux Médecins et Pharmaciens Sinistrés. The Executive Committee propose to continue their large and definite scheme of expenditure, if the course is justified by reports received from Dr. Pechère's committee as to the employment of the money.

THE FUND AND THE WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

It was decided by the West London Medico-Chirurgical Society some weeks ago to organise a reception in place of the annual dinner so as to enable the President to meet the members in a social manner during his year of office, and at the same time to afford the members an opportunity of contributing to the relief of their professional Belgian colleagues who are suffering so intensely in consequence of the war. A reception will accordingly be held at the West London Hospital to-night (Friday, April 23rd) at 8.30 P.M., when guests, including ladies, have been specially invited. The programme will include war exhibits, short addresses on war subjects (illustrated by lantern slides and pictures), music, and other entertainment. The charge for each ticket, whether for a member, a lady, or other guest, is 5*s*., and it is hoped that members will subscribe even if they are unable to be present. The whole of the proceeds, after the deduction of expenses, will be transmitted as a donation from the society to the Belgian Doctors' and Pharmacists' Relief Fund. Cheques may be made payable to either of the honorary secretaries, Mr. Oswald Addison, F.R.C.S. (125, Harley-street, W.), and Dr. Reginald Morton (66, Harley-street, W.).

THE WEEK'S SUBSCRIPTIONS.

The subscriptions received by Dr. Des Vœux up to Tuesday evening last, in addition to those previously acknowledged, and not including money collected by the Scottish and Irish Funds, are as follows:—

	£	*s.*	*d.*
Danish Union of Doctors (per Dr. Christopherson, Hon. Sec.) (third donation, total £290 5*s.* 8*d.*)—			
"Some Young Doctors from the State Hospital"	8	9	9
Dr. R. Ashleigh Glegg...	1	1	0
Lt.-Col. W. E. Scott-Moncrieff, I.M.S. ...	2	2	0
Dr. A. W. Hare	1	1	0
Mrs Howard, Maidenhead, collected by (per Dr. H. Macnaughton Jones)	8	8	0
Birmingham Local Committee (per Dr. R. Saundby, Hon. Sec.) (sixteenth donation, total £377 12*s.* 3*d.*)—			
Dr. J. Jameson Evans	2	2	0
Bournemouth Division, B.M.A. (per Dr. Eleanor C. Bond, Hon. Sec.) (second donation, total £109 12*s.* 6*d.*)—			
Mr. Frank Belben ...	3	3	0
Dr. W. H. Fawcett ...	2	2	0
Dr. F. Heasman	3	3	0
Dr. R. L. Legate... ...	1	1	0
Dr. C. R. Willans ...	1	1	0
Southern Branch, B.M.A. (per Dr. Jas. Green, Hon. Sec.) (fourth donation, total £48 19*s.* 6*d.*)—			
Dr. Thos. Wright ...	1	1	0
Dr. P. H. Green	1	1	0
Dr. A. E. Bodington...	1	1	0
Dr. C. Peterson Weekes	1	1	0
Maj. E. H. Myles, R.A.M.C.	1	1	0
Dr. J. Ghosh	0	10	6

Statement of Accounts up to March 31st, 1915.

RECEIPTS.

	£	*s.*	*d.*
Donations	8104	1	2
Loan repaid	5	0	0
	8109	1	2
Donations received from March 31st to April 14th	1903	10	0

PAYMENTS.

				£	*s.*	*d.*
Relief				964	10	0
Loans to be repaid				75	6	0
Drugs purchased				245	4	2
Clothes purchased				22	18	0
Administration expenses				36	16	3
Balance—						
Cash at bank ...	266	9	0			
On deposit	6500	0	0			
	6766	9	0			
Less due to Treasurer	2	2	3			
				6764	6	9
				8109	1	2
Relief since March 31st				14	0	0
Clothes				7	16	6

	£	s.	d.
"For a Belgian Chemist's Little Girl," from Betty Mortimer, an English Chemist's Little Girl (A. Mortimer)	0	5	0
Mr. W. F. Beeny	1	0	0
Mr. A. Haynes (collected from a number of Derby Pharmacists) ...	5	0	0
Notts. County Pharmacists Asso. (per Mr. A. H. Bell)—	2	2	0
Collected by Birmingham Pharmaceutical Asso. (per Mr. F. Smith) (seventh donation, total £129 13*s.*)—			
Mr. F. W. Smallwood	1	1	0
Manchester Pharmaceutical Association, collected by (per Mr. T. Miller)—			
Mr. J. Boor	0	10	6
Mr. J. E. R. Holman...	0	10	6
Mr. A. Marsland	0	10	0
Mr. A. Hershberg ...	0	5	0
Mr. J. C. Kidd	0	5	0
Mr. M. Matz...	0	5	0
Mr. S. Matz	0	5	0
Mr. W. J. Cooling ...	0	2	6
Mr. G. Wilkinson ...	0	2	0
Shropshire and Mid-Wales Branch, B.M.A. (per Dr. A. G. Mackenzie, Hon. Sec.) (seventh donation, total £46 3*s.* 6*d.*)—			
Dr. Mathewson	1	1	0
Dr Frederic Barker ...	1	1	0
Mr. Herbert Tilley... ...	10	0	0
Mr. N. H. Martin	5	5	0
Professor H. D. Greenish	5	0	0
Association of Certified Dispensers (Society of Apothecaries of London) (additional, total £16 11*s.* 6*d.*) ...	0	7	0

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham-gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Ltd.

THE APPEAL FOR SURGICAL INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge the receipt of surgical instruments kindly contributed by the following donors since the publication of the last list:—

Dr. H. W. Gardner, Shrewsbury; Mr. J. E. Burton, Middlewich, Cheshire; and Dr. A. G. Mackenzie, Shrewsbury.

Obituary.

SIR GERALD BOMFORD, K.C.I.E., M.D. LOND., L.R.C.P. LOND., M.R.C.S. ENG.,

LATE DIRECTOR-GENERAL, INDIAN MEDICAL SERVICE.

WE regret to announce the death of Surgeon-General Sir Gerald Bomford at St. Thomas's Home, London, on April 12th, at the age of 63. He was educated at King's College, London, and graduated as M.B. at the University of London in 1873. In 1874 he obtained the degree of M.D. and in the same year entered the Indian Medical Service, being appointed to the Medical College, Calcutta, first as resident surgeon and afterwards as resident physician and professor of pathology. In the two following years he served with the Perak Expedition, receiving the medal with clasp, and subsequently in 1886 was appointed professor of physiology at the Medical College, Calcutta, and later became its principal and occupied the chair of medicine. In 1905 he was appointed Director-General of the Indian Medical Service, which position he held till succeeded by Sir Charles Pardey Lukis some five years later.

Dr. N. I. Tirard writes: "The announcement of the death of Surgeon-General Sir Gerald Bomford will have been read with great regret by all who knew him. After he entered the army in 1874 he threw himself into his duties with characteristic energy and rarely revisited his old school. As a student he had a very distinguished position, and his fine presence always attracted attention. From early days he was devoted to his professional work, and, although he entered King's College in a year which produced many men who subsequently earned high honours, Gerald Bomford occupied a place in the foremost rank in all class competitions. He was awarded one of the junior scholarships at the end of his first year, and he gained prizes in anatomy and chemistry, and distinctions in several other subjects. In due course he became house physician and for a year before he entered the army he was Sambrooke medical registrar at King's College Hospital. This record of work, however, only exhibits one of the facets of a many sided character. He was one of the most regular supporters of the Medical Society of King's College, and was one of the honorary secretaries during the presidency of Professor William Rutherford, who then occupied the chair of physiology. At these meetings Gerald Bomford could always be counted upon for amusement, no matter what the subject of debate. Gifted with a sonorous voice, with easy fluency of diction, and with a somewhat deliberate delivery, he delighted his auditors with a masterful method of dealing with his opponents. His invective, often turned upon his best friends, never wounded; it served merely to enliven the meeting and to stimulate others to greater exertions. Junior members of the society might tremble, but the disputants went away together on the best of terms, and subsequently carried their friendship through the wards, to the army, and to India. In the steady industry of these early days, in the acquisition of ready speech, and in the understanding of his fellow men Gerald Bomford laid the foundations of his future success in the Indian army, and he left in this country many to rejoice when honours came to him, many to sorrow now that his career is ended."

WILLIAM SANDILANDS HARRISON, M.B., C.M. GLASG.,

LIEUTENANT-COLONEL, ROYAL ARMY MEDICAL CORPS.

LAST week we announced in our Service column the death of Lieutenant-Colonel W. S. Harrison, which took place on April 12th at Bankfield, Haslingden, the residence of his mother, at the age of 43 years. He graduated as M.B., C.M. at the University of Glasgow in 1893.

Colonel Sir W. B. Leishman, in a letter dated from the British Expeditionary Force, says: "By the death of Lieutenant-Colonel W. S. Harrison, the Royal Army Medical Corps has lost an officer whom it could ill spare and for whom, had he lived, high honours and distinctions would most certainly have been in store. There can have been no officer in the corps of his standing who was more universally respected and liked both for his exceptional professional qualifications and his sterling character. A sense of personal bereavement must be strong in all who knew him and read of his death. The writer had the privilege of the closest association with him as a fellow worker in the Royal Army Medical College for many years and was under a heavy obligation to him for loyal and untiring coöperation, both in research and in teaching, and the passing years served but to strengthen a feeling of admiration and respect for a character and intellect of exceptional strength. The research work accomplished by Lieutenant-Colonel Harrison in many lines is of great and permanent value, notably his important share in establishing typhoid inoculation upon a firm and scientific basis; the benefits resulting from this work are being reaped to-day by the army in France. His appointment to the chair of Tropical Medicine at the Royal Army Medical College proved an immense success and furnished an instance of that rare but admirable combination, a clinical observer of exceptional experience and insight, armed with a full practical knowledge of modern laboratory methods. The number of puzzling and difficult cases on which he was able to throw light and initiate a successful treatment must have been a reward in itself, but those who benefited by his skill, such as the writer and many another officer and man in the army, have good cause to keep his memory green. It was a hard stroke of fate which denied to him the chance of serving his country at this time, and one which he felt bitterly; but the fortitude and calm courage with which he endured his painful illness and faced the inevitable will not readily be forgotten by those whom he honoured with his friendship."

If we add nothing to Sir William Leishman's warm testimony to the character and attainments of his friend it is only because he has said so exactly what we should have desired to say. Colonel Harrison had already made himself a great name in tropical and preventive medicine, and has died before his qualities and merits were known much beyond his immediate sphere of work.

PANTLAND HICK, M.D. LOND., M.B., CH.B. LIVERP.,

HONORARY ASSISTANT PHYSICIAN, LIVERPOOL ROYAL INFIRMARY, ETC.

IN the death of Dr. Pantland Hick, which took place on April 17th, after a few days' illness, from a virulent attack of scarlet fever, the Liverpool Royal Infirmary mourns one of the most brilliant of its medical staff. Pantland Hick received his medical education at the University of Liverpool, when he graduated in 1904 as M.B., B.Ch., with second-class honours, after a distinguished student's career. He won the Lyon Jones scholarship, the Derby exhibition, and the Thelwall Thomas fellowship in surgical pathology. In 1906 he took the M.B., B.S., of the University of London, and in 1909 the M.D. of that University. Two years ago he was appointed honorary assistant physician to the Liverpool Royal Infirmary and subcurator to the pathological museum of the University of Liverpool, prior to which he was honorary physician to the Liverpool Stanley Hospital and assistant physician to the Liverpool Infirmary for Children. He was also a captain in the 1st Western General Hospital R.A.M.C.(T.F.). He was a most successful teacher in medicine at the Liverpool Royal Infirmary, where his clinic was highly prized by the students, with whom he was very popular. A career full of promise for the future has been thus sadly cut short at the early age of 34 years.

A medical correspondent, who was a friend of Dr. Pantland Hick for many years, writes:—

"By the death of Pantland Hick at a lamentably early age the profession in Liverpool is deprived of one of its most brilliant workers, and one whose great promise as a student had already shown the fruits of fulfilment. But great as is his loss to his professional colleagues, it will weigh still more heavily on his more intimate friends. He was as earnest and devoted in his friendship as he was to his work. The performance of his duties was marked by the most painstaking and conscientious qualities; he was ever ready to put his great knowledge and keen insight unreservedly at the disposal of his comrades, and the throng of students and post-graduates at his clinics testified to his ability and success as a teacher. His modest bearing, ready self-effacement, winning address, and sterling professional acquirements made him typical of the kind and gentle physician. Through all his work and scientific achievement there shone the simple, plain faith that is so often seen in the eyes of those we know as good and great. His loss will be deplored by all who knew him, not only as a capable and willing worker, but also as that of a kind, loyal, and honourable man."

WILLIAM THOMAS EDWARDS, M.D. LOND., F.R.C.S. ENG., LL.D., J.P.,

CONSULTING PHYSICIAN TO THE CARDIFF INFIRMARY.

Dr. W. T. Edwards, who died from bronchitis at Cardiff on April 11th, at the age of 93, was one of its most distinguished citizens and a great benefactor to the city, his donations to University College, Cardiff, amounting in all to some £3000.

Dr. Edwards, who was the son of a medical man, was born at Caerphilly on Dec. 6th, 1821. He was the great-grandson of William Edwards, who in the middle of the eighteenth century spanned the Taff at Pontypridd with the largest one-span stone bridge in the world, gaining thereby a European reputation as a bridge-builder. Edwards received his medical education at University College, London. He became a Member of the Royal College of Surgeons of England in 1842 and Fellow in 1879, and took the Licence of the Apothecaries' Hall in 1843. In 1844 he graduated as M.B. at London University, gaining the gold medals in anatomy and physiology, in materia medica and in midwifery. In 1850 he proceeded to the M.D. degree. A life governorship was conferred on him by University College, London, in 1871.

In 1852 Dr. Edwards began that active connexion with the Cardiff Infirmary which lasted until he was appointed on the consulting staff. He was in succession surgeon, consulting surgeon, physician, and consulting physician. In 1902 his jubilee of service at the infirmary was celebrated at a banquet given by his local *confrères*. In 1885 he was President of the British Medical Association on the occasion of its holding its annual meeting at Cardiff.

Dr. Edwards's activities were by no means confined to things relating to his own profession, for municipal and religious movements will enshrine his name in their records as an active and efficient worker. His funeral, which took place on April 15th, showed by its thronged attendance and representative character the general esteem in which he was held.

DEATH OF DR. WALTER LEWIS THOMSON, OF DERBY.—Dr. Thomson died recently at the early age of 40, it is supposed from infection contracted by inhalation in the course of his duty. Dr. Thomson, who was instrumental in solving the mystery of the pork-pie outbreak at Chesterfield a few years ago, was senior assistant medical officer of health and school medical officer for Derbyshire, and was in charge of the county tuberculosis dispensary. He received his medical education at Glasgow University and Cardiff, and graduated as M.B., Ch.B. in 1897, and M.D. (with commendation) in 1904. He took the D.P.H. Cantab. in 1902. He was formerly assistant medical officer of health for Lanarkshire and physician-superintendent of the Fever Hospital, Motherwell.

DEATH OF DR. JAMES HUXTABLE BENDLE, OF BATH.—Dr. Bendle, who was county oculist for Somerset, died with painful suddenness from hæmorrhage at Bath on April 13th. He studied medicine at St. Mary's Hospital, and took the joint qualification of the London Board and the M.B. Lond. in 1898. He was formerly resident medical officer at York Dispensary, and assistant house surgeon, and afterwards house surgeon, at the County Hospital, York. He practised for some seven years at Abbots Bromley, Staffordshire, until his health broke down. Dr. Bendle leaves a widow and two children.

The War.

THE CASUALTY LIST.

Lieutenant M. Burnett, R.A.M.C., is reported killed during the operations in the Persian Gulf. He was formerly house physician at St. George's Hospital, and had been for three years in the Royal Army Medical Corps.

Lieutenant E. Stratford, R.A.M.C., who was attached to No. 8 British Field Ambulance with the Lahore Division of the Indian Expeditionary Force, has died in England from shell wound received at Neuve Chapelle.

Captain E. B. Allnutt is reported wounded during the operations in the Persian Gulf.

THE MEDICAL HISTORY OF THE WAR.

A committee, under the presidency of the Director-General, Army Medical Service, has been formed to provide the necessary coördinating authority for the compilation of an adequate medical history of the war.

In connexion with each of the chief subdivisions of the work, military and civilian members have been appointed, except in the case of the Section of Hygiene, where both members are military.

The constitution of the committee under the presidency of the Director-General is as follows:—

Medicine.

Lieutenant-Colonel O. L. Robinson, R.A.M.C., and Professor Sir William Osler, Bart., M.D., F.R.S.

Surgery.

Lieutenant-Colonel E. M. Pilcher, D.S.O., M.B., F.R.C.S., R.A.M.C., and Colonel F. F. Burghard, M.D., M.S., F.R.C.S.

Pathology and Bacteriology.

Colonel Sir William Leishman, C.B., M.B., F.R.C.P., F.R.S., and Captain F. W. Andrewes, M.D., F.R.S.

Statistics.

Lieutenant-Colonel H. P. W. Barrow, R.A.M.C., John Brownlee, M.D., D.Sc., and Lieutenant-Colonel W. N. Barron, M.V.O., R.A.M.C.

Hygiene and Sanitation.

Colonel W. H. Horrocks, M.B., K.H.S., and Lieutenant-Colonel W. W. O. Beveridge, D.S.O., M.B., R.A.M.C.

Historical and Secretarial.

Captain F. S. Brereton, R.A.M.C., and W. M. Fletcher, M.D., Sc.D., F.R.S.

In each section the members of the committee have been given authority to co-opt for the purposes of the section other persons, and it is hoped that in the various sections the best results of the varied experience now being gained will be selected and arranged for publication in the Medical History, and not left to be distributed in scattered communications published independently by individual observers.

SIDE-LIGHTS ON MILITARY MEDICINE.

An indirect and more or less unforeseen result of the wholesale militarisation that is in progress is the unprecedented opportunity it affords, incidentally, for a sort of medical census of the male population, especially efficient in countries where conscription is in force since this means that virtually the whole male population of the country is medically reviewed and is, in addition, subjected to a series of crucial traumatic and psychical tests. Where conscription runs we have, in times of war, a preliminary examination of those called up for service which enables us to ascertain exactly what proportion of males between 18 and perhaps 50 years of age suffer from the various disabling diseases and infirmities comprised in our nosology—statistical elements not procurable in any other way. Of even greater interest is the information that warfare affords concerning the vulnerability to disease of the fighting elements and the degree of protection provided by sanitary measures, including vaccination and seropathically induced immunity. Already we have learned much. The subjects of heart disease, for instance, are shown to be capable of vastly more resistance to fatigue and exposure than we should *a priori* have expected,[1] though no doubt to the detriment of their subsequent prospect of life. Dr. Legueu in the *Journal des Praticiens* of March 20th, 1915, writes an interesting article on the prevalence of urinary incontinence and vesical neuroses among the combatants, a wholly unexpected manifestation of nervous commotion. But most interesting of all perhaps are the remarkable effects of cerebral commotion, apart from physical injury, induced by high explosives. Fine robust men, excellent experienced soldiers, are found to break down under the terrible stress of a heavy bombardment and develop neurasthenia, melancholia, or traumatic hysteria.[2] In some the hebetude and melancholic taciturnity only last for a few days and disappear when the subject is set to some manual work that distracts his attention, but in others it is of a more permanent character. Cases are on record of more or less prolonged amnesia associated with curious disturbances of the functions of speech and vision. One man, for instance, could not pronounce familiar words, though he could spell them, and though he understood them when spelled he failed to grasp their meaning when pronounced. The intellectual status of the victims puts simulation out of the question, the troubles being far too complicated and consistent for a layman to reproduce for weeks at a time. In a somewhat different category are cases in which a trifling skin wound has induced functional paralysis of adjacent muscles or even of one side of the body, only to be cured by "suggestion" in one form or another, and in this direction high-frequency currents, by virtue of their awe-inspiring phenomena, have proved singularly successful among French troops. The tremendous strain thrown on the nervous system by prolonged exposure to the hardships of life in the trenches and heavy shell fire starts into being any latent tendency to somnambulism, and some extremely thrilling tales are told of the aberrations observed during the first few nights following a heavy fight. Cases of downright insanity have been extremely rare, at any rate among the French troops, in fact, so far, not one has been placed on record. To useful work which the medical returns of the war are opening up for statisticians imagination can hardly set bounds. It is of the utmost importance therefore that these returns should be well kept.

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[1] THE LANCET, Feb. 13th, 1915, p. 335.

[2] Dr. Noel Fiessinger, Journal des Praticiens, Feb. 13th, 1915; THE LANCET, March 27th, 1915, p. 663.

SOLDIERS' AND SAILORS' INSURANCE.

The Insurance Commissioners have recently issued a reminder (Leaflet No. 29, Revised) as to the benefits to which seamen, mariners, and soldiers are entitled under the Insurance Acts. They have also sent letters to the clerks of Insurance Committees (Circular 53/I.C.) giving information as to a scheme for dealing with soldiers discharged from the army suffering from tuberculosis, the same arrangements applying, if occasion arises, to seamen or mariners belonging to Approved Societies. The matter is dealt with in connexion with the demand for hospital space for other purposes and in order to provide for the taking over of tuberculous soldiers as promptly as possible by Insurance Committees when they need continued residential treatment. As committees may not have beds ready when wanted, and as it will not be possible to postpone the date of the soldiers' discharge from the military hospitals, the Commissioners will coöperate by taking beds in private institutions in which the soldiers in question will be placed temporarily, pending preparations for their reception by the appropriate committees. In respect of these cases a sum will be available to the committee out of the Central Sanatorium Benefit Fund under Article 24 of the Payments to Insurance Committees Regulations, 1914, and payments thus made to committees will be supplemented by the Commissioners by grants out of the Grant-in-Aid of £100,000, provided by Parliament on the Supplementary Estimates 1914–1915, the effect being that committees will be credited with a possible sum of £20 for each case taken over by them, deduction being made to meet the expense of the temporary provision referred to. The circular makes recommendations and gives full particulars of the procedure which will be adopted when cases of soldiers suffering from tuberculosis and needing continued institutional treatment arise. It explains that the basis of the proposed grants has been framed with reference to the fact that the cases in respect of which they are payable have all been certified by the military authorities to require some period of residential treatment.

GERMAN MEDICAL PAPERS.

Further contributions to German papers have reached us which show that the medical problems of the war are being carefully considered. Of typhus fever we learn the following:—

> Typhus exanthematicus, although almost confined as yet to the prisoners' (Russian) camps and those who have had to do with them, has taken heavy toll of distinguished men, of whom Professor Cornet, author of a standard German work on tuberculosis, is the latest victim. Among the Russian prisoners themselves the disease appears to be but slightly fatal, Dr. Lindner (Linz) recording no death among 300 cases in a camp of 9000 persons, while 24 per cent. of infected attendants in the same camp succumbed. In Tsingtau figures had previously been given by Fürth as follows: Mortality among Europeans 25 per cent., among the Chinese themselves 11 per cent. only; in accordance with Römer's law, the smaller the distribution of an infection among a population the greater the case mortality. No suggestions for treatment are at present forthcoming, and the diagnosis may be very difficult. Professor Klemperer and Professor Zinn, who attended Professor Jochmann, who also has died of this fatal disease, state that he had irregular fever, headache, and sleeplessness ten days after visiting cases. A septic throat followed, with bronchitis and heart weakness, and on the sixth day a transient roseola on the chest and abdomen. The spleen was enlarged to percussion, but a Widal reaction was negative, and the blood contained no typhoid bacilli. The roseola returned on the ninth day and became petechial. Death occurred on the eleventh day from heart failure. Special attention is due to the fact that of the three physicians in attendance and of the other seven persons, nurses and family, in close attendance on the patient, not one became infected. Jochmann himself was entirely convinced that a perfectly clean patient is no danger to his surroundings, and records in his book the observation of a Serbian doctor who placed other patients in the same bed with a washed typhus patient clad in clean linen without any of them taking the infection.
>
> It is becoming increasingly certain that lice are the sole carriers of the virus from patient to patient, and it was another victim of the disease, Professor v. Prowazek, of Hamburg, who showed that a single louse from an infected patient could convey infection to an ape. On the other hand, Curschmann says that infection can be conveyed by straw, clothes, &c., months old when all the lice and nits must long have died out; but in this case the explanation is advanced that the virus has a certain tenacity, possibly a resting form, which is, as such, not infectious for us but only for the louse, which takes the virus up and activates it, acting to some extent as a sensibilisator—conveying it then to man by its bite. The association of the louse with typhus is no new idea, but was described by the Hungarian (typhus has been known for centuries as the "Hungarian disease"), Tobias Coberus, at the beginning of the seventeenth century, who thought the louse had a psychic effect upon the human subject and who recommended garlic externally for prophylaxis, others at that time using marjoram, mint, cloves, and other ethereal oils for the same purpose. Of more modern remedies, Professor Blaschko, as an alternative to naphthalene where the smell is objected to, suggests mercury as the only effective alternative, preferably in the form of hydr. c. cret. (1 : 4), carried to the amount of 30 grm. in a bag in each trouser pocket. Professor Sigmund Fränkel, whilst experimenting with oil of anise, was accidentally supplied with anisol, which is phenyl-methyl-ether, and this proved to be from six to eight times more poisonous to lice than any other remedy, being at the same time one-twelfth as poisonous to man as phenol, and causing no eczema or irritation of the skin. The only analogy he could find was di-methyl-resorcin, a single drop of which under a bell jar kills frogs in three to five minutes. On a large scale the Bavarian Home Office recommends the employment of SO_2 as a disinfectant, best prepared by burning a mixture of CS_2 90 per cent., water 5 per cent., and methylated spirit 5 per cent., 2½ kilos for every hundred cubic metres of room space. For prophylaxis the attendants should closely fit their garments at the wrist and ankle, and use strongly smelling ethereal oils or naphthalene, bearing in mind, further, that in the experience of Professor Kraus, of Buenos Aires, infection may be avoided by thorough ventilation.

THE BRITISH RED CROSS SOCIETY.—The fourth annual report (1914) of the County of London Branch of the British Red Cross Society (founded Dec. 9th, 1909) shows that on the outbreak of war all divisional secretaries returned at once from holiday leave. Large numbers of enrolments took place, and Colonel Gimlette's scheme of registering promised articles for the equipment of auxiliary hospitals was at once put into action, and serving centres were established all over London. The War Refugees' Committee was rendered aid in housing, and the following homes and hospitals were accepted by the society: Weir Hospital, Balham, 50 beds; Hospital for Officers, 24, Park-street, 19 beds; 9, Cedars-road, Clapham Common, 36 beds; 78, Onslow-gardens, 25 beds; Cedar Lawn Hospital, 36–42 beds; Oakhurst, Erith, 20 beds; Territorial Hospital, White City, 40 beds. Eight detachments were mobilised, of which one has since been demobilised. By means of boxes large sums were collected. A member is selected from each of the detachments for service as women orderlies at the King George Hospital, Mrs. Scott Gatty, commandant of No. 50, being in charge. A useful work is the systematic inquiry made among the London hospitals for missing officers and men. The present strength of the branch comprises 70 detachments with a total of 2711 all trained to work. Each of the divisions corresponds with the area of one or more metropolitan boroughs—viz., St. Marylebone, Greenwich and Woolwich, Camberwell, Hammersmith, Hampstead, West Hampstead, Islington, City of

Westminster, Kensington, Chelsea, Battersea, St. Pancras, Paddington, Hackney and Stoke Newington, Lambeth, Putney and Fulham. To these Poplar has lately been added. All report good work done. The finances of the branch were fortunately put on a more satisfactory footing early in 1914, so that in place of a deficit, as always formerly appeared, the branch had a balance in hand at the end of the year amounting to upwards of £374.

The East Lancashire branch of the British Red Cross Society has undertaken the whole of the work in connexion with the transport of wounded soldiers, British or Belgian, sent to Manchester for treatment. This involves the meeting of hospital trains, usually during the night, and the subsequent transfer of patients to and from the many military and Red Cross hospitals in this area. Since the outbreak of the war this transport section has met 84 trains and transported 12,306 sick and wounded soldiers to hospital. In addition many wounded have been conveyed from one hospital to another, which brings up the total number of transports carried by this society to about 20,000.

Lieutenant-Colonel Sir Courtauld Thomson has been appointed, with the approval of the Admiralty and the War Office, head of a commission to be sent to Malta and the East by the Joint War Committee of the British Red Cross Society and the Order of St. John, and will shortly proceed to the Mediterranean.

VACANCIES FOR MEDICAL OFFICERS.—We are asked to state that there are vacancies for five medical officers prepared to serve abroad in the 2nd and 3rd Line Welsh Border Mounted Brigade Field Ambulance. Pay and allowances as in the Regular Army, together with outfit and camp kit grants. Full particulars can be obtained on application to Major D. C. Leyland Orton, Officer Commanding, Thomas-street, Chester.

UNIVERSITY OF ABERDEEN AND THE WAR.—At the spring graduation at the University of Aberdeen many of those graduating were in khaki and several of the professors wore the uniform of the Royal Army Medical Corps. Owing to the large number serving with the colours the number of undergraduates present was much smaller than usual. The Principal, in his address, stated that over 1100 graduates, alumni, and students were serving with the forces, of whom some 150 were actually under fire at the time of speaking. With regard to medical students, Principal Smith said that on service or under training in the Officers' Training Corps there were 368 students, or rather more than 50 per cent. of the whole. Of the rest a certain number were under age, some applied for commissions or sought to enlist, and some had not the necessary physical qualifications. The executive of the General Medical Council and the present heads of the Military Department of the War Office had strongly advised many medical students to complete their curriculum in view of the needs, both civil and military, in the immediate future. The Principal also read the roll of dead, seven in number, which included the names of Dr. Thomas Peppé Fraser, Colonial Medical Service; Surgeon William Mellis Mearns, R.N.; Lieutenant-Colonel W. H. Gray, I.M.S.; and Lieutenant Angus Forsyth Legge, Medical Company, Singapore Volunteer Corps.

LICE IN THE TRENCHES.—We are asked to state that on Tuesday afternoon, April 27th, between the hours of 3 and 5, Mr. M. E. MacGregor will give a demonstration at the Wellcome Bureau of Scientific Research, 10, Henrietta-street, Cavendish-square, W., on Lice and their Prevention, to which all interested are invited. The subject is one which, while of paramount importance at the present juncture in relation to the war, occupies an important place also in regard to civil life, and a good attendance may therefore be reasonably expected, including many general practitioners. It should be of particular interest to those practising in the densely populated areas.

INDIAN WARD OF THE ST. JOHN AMBULANCE HOSPITAL BRIGADE.—Her Highness the Mahendra Maharani Sahiba of Panna has made a donation of Rs.1000 to the Indian Ward of the St. John Ambulance Brigade Hospital now being organised on behalf of the Indian Council by the Order of St. John of Jerusalem. This amount is included in a contribution of Rs. 5000 to the St. John Ambulance Red Cross War Fund, the fifth contribution sent by Mrs. Spence, wife of the Political Agent at Nowgong, Bundelkhand. Major Perry, I.M.S., commanding an Indian Stationary Hospital, says that the St. John Red Cross gifts were exceedingly useful and much appreciated. Ahmed Saneh Pasha, an Arab notable of Basra, has contributed Rs.1500 to the St. John Ambulance Association in India to assist the work carried on by that society on behalf of the wounded, a striking proof of local Arab sympathy with the British cause.

ROYAL HOSPITAL FOR SICK CHILDREN, ABERDEEN.—This hospital suffered on the outbreak of war from the mobilisation of most of the members of the medical and surgical staff, and the lady superintendent was also called up for duty. The directors made the best arrangements possible under the circumstances, and by the willing and efficient coöperation of the reduced staff, and the assistance of others, they believe that the work has been efficiently overtaken. Owing to the very exposed position of the hospital, in the event of the bombardment of the city, the directors felt that the inmates should, if possible, be removed to a safer place. The trustees of the late Mr. Thomas Ogilvie generously offered the use (rent free) of Kepplestone House, Rubislaw, where the patients were removed some time ago, since when out-patients have, owing to facilities granted by the board, been treated at the Aberdeen Royal Infirmary.

WOUNDED ALLIES RELIEF COMMITTEE.—We are informed that the Wounded Allies Relief Committee has recently extended its good work in supplying Belgian *réformés* soldiers with artificial limbs. A number of cripples are now assembled at the committee's No. 2 Home for Disabled Belgian Soldiers (45, Courtfield-gardens) for this purpose, and many have already been examined by Sir William Collins, K.C.V.O. Food for this home has been promised by the National Food Reform Association, while Dr. Bridges is acting as honorary medical adviser, and Mr. C. St. Aubyn-Farrer is giving massage and electrical treatment. Gifts of clothing and of French and Flemish books will be gratefully received by Miss Humby, matron at the home. A very successful branch of the committee's work is the training home at Pontefract, where many thousand men are under care and supervision. Queen Alexandra recently wrote to the committee thanking them for the trouble they had taken in guiding one particular case to a successful issue. The committee have been advised by telegram that the advance party of its typhoid hospital unit recently sent to Serbia has arrived at Nish, and, at the request of the Serbian Government, is proceeding to Kragujevac, where the hospital, consisting of 100 beds, will be established. Ten other nurses, under the charge of Miss Edith Mackenzie, house sister of the City Fever Hospital, Birmingham, will shortly follow. All communications for the committee should be addressed to Mr. Albert Van der Velde, honorary hospital superintendent, Sardinia House, Kingsway.

THE OPEN-AIR TREATMENT OF TYPHUS FEVER.—Sir Clifford Allbutt, in a letter to *The Times* of April 15th, refers to his experience during the Leeds outbreak of typhus fever during the "sixties," of which the mortality was very heavy. In consequence of a remark of the late Professor Rolleston, of Oxford, concerning the "Irish fever," that "not a few of the patients carried out into the hedge bottoms as moribund, nevertheless recovered," he was led to test open-air treatment as a principle of cure. He had the staff warmly clad and all the windows taken out or screwed firmly open. The mortality of all cases fell promptly from 16–17 per cent. to 6–7 per cent., and the infective activity was much reduced. He therefore strongly urges that in Serbia every typhus fever patient should be carried out into the open air, in we weather with a waterproof coverlid for sufficient protection, and that every attendant should wear glazed cotton overalls and protect the neck and hair in like manner.

SOCIETY OF MEDICAL OFFICERS OF HEALTH: SCHOOL MEDICAL SERVICE GROUP.—A meeting of this group was held at the society's offices, 1, Upper Montague-street, Russell-square, W.C., on April 10th. The financial position of the past year was considered and officers were appointed. The reply of the council of the parent society to the petition of the group for the formation of a school medical service branch was considered and a resolution was passed with the object of improving the representation of the group on the council. The recent statement of Sir Alfred Keogh, Director-General, Army Medical Services, War Office, and the circular of the Board of Education as to the urgent need for more medical officers,[1] were considered, and it was unanimously resolved :—

> That the School Medical Service Group notices the grave appeal issued by the War Office for more medical officers, and urges members of the School Medical Service to respond to this appeal.

Members of the service having any difficulty in obtaining leave of absence or a substitute should apply to the honorary secretary of the group (Dr. A. Ashkenny, 2, London-road, Basingstoke). A joint paper by Dr. C. W. Hutt and Mr. G. Finch was read on School Medical Service Work and the British Army, pointing out the relation of such work to the physique of the army.

SHOP ASSISTANTS AS SOLDIERS.—The Early Closing Association is the oldest trade institution in the country, and has been supported by both employers and employed in its efforts to solve the vexed question of hours of labour. The board of management are anxious to maintain the best traditions of the association's past history by recognising in a practical manner the response of shop assistants to the call of the war. The patriotism of those shopkeepers who have encouraged their men to enlist, and who in many cases are looking after the dependents during the absence of the breadwinner, deserves the gratitude of the country. The authorities of the association suggest that the most practical way of showing this would be to improve the conditions of labour in shops, pending legislative protection, ere the men return to civil work. When victory has been gained the country will need, more than ever, a strong and hardy race to uphold national prestige, and this cannot be secured by working young men and women in shops until undue hours. The association will assist soldiers to obtain employment after the war is over, and a register is being prepared of those who propose to return to shop life. Captain Albert Larking, secretary of the Early Closing Association (3, Tudor-street, London, E.C.), will be glad to hear from shop assistants now on active service, whether at home or abroad, as to their intentions in this direction.

THE SAMARITAN HOSPITAL, BELFAST.—At the annual meeting of this hospital held on April 12th it was reported that the matron (a sister under the Territorial Branch) was called up for war service in August last, and as a result the committee decided to close the hospital, and since Jan. 1st, 1915, it has been given over to the Ulster Volunteer Hospital as an annexe for wounded soldiers.

THE King and Queen have promised to attend Madame Clara Butt's subscription concert to be given at the Albert Hall on May 13th in aid of the British Red Cross and the Order of St. John. Mr. Kennerley Rumford, who has been serving with the Red Cross Society since the war started, has promised to take part. The expenses are being met by Madame Clara Butt.

THE Derbyshire County Council have decided to offer to the War Office the services of their entire medical and nursing staff for administering a hospital of 300 beds, provided the Local Government Board will sanction the temporary use of the new tuberculosis sanatorium at Chesterfield, which cannot be staffed at present through the scarcity of medical men.

THE War Office announces that the establishment of military hospitals on a large scale for convalescents as well as for the sick and wounded will preclude the necessity for accepting further offers of private houses for these purposes.

A MOTOR ambulance, to be known as the City of London Russian Cavalry Ambulance, has been presented by Mr. Walter Winans to the Russian Red Cross Society.

ACCORDING to a German wireless from Berlin, dated April 15th, the Emperor has decorated Professor Roentgen with the Iron Cross on the occasion of his 70th birthday, thus acknowledging his eminent services to surgery.

Medical News.

WARREN TRIENNIAL PRIZE.—The Warren triennial prize, which was founded by the late Dr. Jason M. Warren in memory of his father, is awarded to the best dissertation on some subject in physiology, surgery, or pathological anatomy, the arbitrators being the physicians and surgeons of the Massachusetts General Hospital. The subject for competition for the year 1916 is on some special subject in physiology, surgery, or pathology, and the dissertation must be in either English, French, or German, typewritten, and suitably bound. Work that has been published previously will not be considered in competition. The name of the writer must be enclosed in a sealed envelope, on which must be written a motto corresponding with one on the accompanying dissertation. Any clue given by the dissertation, or any action on the part of the writer which reveals his name before the award of the prize, will disqualify him from receiving the same. The amount of the prize for the year 1916 will be $500. Dissertations will be received until April 14th, 1916. A high value will be placed on original work.

THE LATE JAMES BANNERMAN CUNNINGHAM, M.B., C.M. EDIN.—Dr. Cunningham died on April 4th at Ruyton, Salop, after a very brief illness from septicæmia, at the age of 62. He entered the profession in the late "seventies," and was at first in practice at Prestonpans, East Lothian. Subsequently, after a short sojourn in Canada, he practised at Tongue, Sutherlandshire, and finally at Ruyton, where he spent the last 23 years of his life. Dr. Cunningham was a man of robust health, was keenly addicted to outdoor pursuits, but was ever conscientious in the discharge of duties. He was very popular among the working classes, with whom he had a happy manner; though sometimes brusque and given to plain speaking if occasion arose, he possessed a natural kindliness and sincerity which found him many friends wherever he went. He leaves a widow and ten children, most of whom are grown up. The funeral was largely attended.

THE MENTAL AFTER-CARE ASSOCIATION.—This association, which is the only charity of its kind in the United Kingdom, assists poor persons convalescent or recovered from institutions for the insane from all parts of the country, and the report of the council for the year 1914 shows a record of much good work. During 1914 applications on behalf of 373 persons were received, of whom 225 were women and 148 men. This, however, does not represent all the cases dealt with in the year under notice, as nearly 200 old cases also received attention. As a result of the war greater calls upon the services of the association may be expected, and the charitable public will no doubt see that the really useful work which is done by this charity is not hampered by lack of financial support.

NORTH STAFFORDSHIRE MEDICAL SOCIETY.—The first meeting of this new society took place on March 25th, at the North Staffordshire Infirmary, when cases and specimens were exhibited. The following are the officers of the society :—President: Dr. John Russell. Vice-President: Dr. F. Shufflebotham. Treasurer: Mr. Jonathan Steele. Secretaries: Mr. R. H. Dickson and Mr. E. E. Young. Members of council: Dr. C. F. Daly, Dr. T. Basil Rhodes, and Dr. W. Mitchell Smith. The meetings are announced to take place monthly, except July, August, and September.

ERRATUM.—In the pass-list of the University of London (Second Examination, Part II.), published in THE LANCET of April 10th, p. 780, the † and ‡ (indicating distinction in anatomy and pharmacology) were unfortunately overlooked in the case of Emily Catherine Lewis, and the ‡ (distinction in pharmacology) from the names of Bruce Maclean and Benjamin Thomas.

ACCORDING to an official memorandum, it is expected that the inquiry undertaken by the Royal Commission on Venereal Diseases will extend at least until the end of March, 1916.

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[1] THE LANCET, April 17th, p. 836.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Parliamentary Session.

PARLIAMENT resumed its sittings on Wednesday, April 14th. Business is mainly confined to matters connected with the war. For the meantime sittings will be only upon Tuesdays, Wednesdays, and Thursdays, but special arrangements are being made to expedite the procedure relating to the notice required for questions to Ministers. Although these will be concentrated into three days a week, it does not follow that they will be less numerous in the aggregate than they would be had the House sat on the normal occasions.

Antityphoid Inoculation.

Mr. TENNANT, the Under Secretary for War, again states that he is not in a position to announce any change of policy with reference to the inoculation against typhoid fever of officers and men in the army.

Several questions have been asked within the past week in the House of Commons which are framed so as to suggest a desire to discredit inoculation, but in every case they have elicited nothing from the representative of the Government to show any intention to depart from the present policy.

The late Dr. John Esmonde, M.P.

Dr. JOHN ESMONDE, whose death is announced, was one of the few medical members of the House of Commons. He sat for several years as one of the Nationalist members, and was popular in all parts of the House. During the controversies connected with the passing of the National Insurance Act he took a close interest in the conduct of the negotiations concerning the position of the medical profession. He was a few months ago gazetted a captain in the Royal Army Medical Corps, and took a very active part in recruiting for the various branches of the naval and military services.

Mental Treatment Bill.

Mr. CECIL HARMSWORTH, the Under Secretary for Home Affairs, has introduced a Bill in the House of Commons "to facilitate the early treatment of mental disorder of recent origin arising from wounds, shock, and other causes." It was read a first time.

The House of Commons and Alcoholic Liquors.

In the House of Commons on Tuesday, April 20th, a motion was moved expressing the opinion that during the continuance of the war no alcoholic liquors should be sold in the refreshment-rooms or at the bars attached to the House. The debate showed the existence of a considerable amount of divergent opinion, and for that reason it was adjourned. But it has to be added that the amount of alcoholic liquors consumed at the House is now surprisingly low. It is stated that the total liquor bill for the two days on which the House sat last week was only 4*s*. Meantime no declaration has been made to the House of the policy which the Government will propose to pursue in the country with reference to the problem of drink as it affects the output of munitions of war.

The Finance of the National Insurance Act.

Some decreases in the sums which have to be found by Parliament for financing the operations of the National Insurance Act are noted in civil service estimates for 1915–16. There is a fall of £600,689 on the vote for the National Health Insurance Joint Committee. The large reduction of £350,000 on subhead relating to sickness benefit (women) is partly due to the fact that in the Supplementary Vote taken in July, 1914, provision was made for two years, and partly to the fact that, as the subhead was then put in the form of a grant-in-aid, an unspent balance can be applied in diminution of the requirements for 1915–16. There is a decrease of £95,000 on the vote for the treatment of tuberculosis (special grants), it being anticipated that the sum of £385,000 will be sufficient to provide all grants which will be earned. The sum voted for pathological laboratories in July, 1914, has not been spent, and a reduced provision of £25,000 has been included for 1915–16.

HOUSE OF COMMONS.

WEDNESDAY, APRIL 14TH.

Cerebro-spinal Fever.

Sir J. D. REES asked the Parliamentary Secretary to the Local Government Board whether local bodies had been warned of the necessity for dealing with overcrowding, want of ventilation, and uncleanliness in areas surrounding London, in view of the existence and possible spread of spotted fever and of the recent report thereon of Dr. A. Newsholme,[1] medical officer to the Local Government Board; and, if not, whether he would now issue a warning letter.—Mr. HERBERT LEWIS replied: Dr. Newsholme's recent Memorandum on cerebro-spinal fever was sent on Feb. 22nd to the sanitary authorities of all districts in England and Wales, with a circular in which the Local Government Board say that they trust that the council and the medical officer of health will take such steps as may be necessary on the lines indicated in the Memorandum should any case of the disease occur in their district. The Memorandum states that in view of the well-known association of cerebro-spinal fever with overcrowding, insufficient ventilation, and uncleanliness, the avoidance of these conditions becomes a matter of prime importance. A copy of the circular and the Memorandum was also sent to each medical officer of health.

Medical Men as Prisoners of War.

Lord ROBERT CECIL asked the Under Secretary for Foreign Affairs whether there were still any British medical men held as prisoners of war by the Germans; if so, how many and what steps the Government proposed to take in order to procure their release.—Mr. PRIMROSE replied: It is believed that there are only three British subjects who claim to be entitled to release as medical men now detained in Germany. Representations on their behalf have been made through the United States Ambassador. According to the latest information the number of military doctors still detained in Germany is 50. Of these, 35 have been officially reported as prisoners through the United States Ambassador and 15 unofficially. The White Paper shows what steps have been taken to obtain the release of these prisoners.

Lord ROBERT CECIL: Is it a fact that prisoners in hospital in Germany, either as patients or doctors, are not allowed to write to their relatives freely; and, if so, what are the reasons for this treatment?—Mr. PRIMROSE: I have no information to show that doctors in hospital are treated differently from other prisoners of war in the matter of correspondence. Inquiries are being made through the United States Ambassador on this point.

Lord ROBERT CECIL: Is the honourable gentleman not aware that a particular doctor who has to attend British prisoners in a certain hospital has through the commandant of the hospital informed his wife that he is not allowed to write?—Mr. PRIMROSE: I will make inquiries about that. I have not heard of it.

THURSDAY, APRIL 15TH.

War Casualties.

Replying to Mr. HOGGE, Mr. TENNANT, Under Secretary for War, stated that the total of British casualties in the war up to April 11th inclusive was 139,347.

Certifying Sickness in Ireland.

Mr. GINNELL asked the Chancellor of the Duchy of Lancaster to say on what scale doctors were paid for certifying sickness under the National Insurance Act in England; what sum that was estimated to amount to annually; what the payments for this service amounted to annually; the Irish branch of the British Medical Association having consented to accept that scale of payment, would he say why it had not been paid; what independent medical approval, if any, the Irish Insurance Commissioners had for the treatment of the sick which their different system of certification involved; and, seeing that out of £97,100, Ireland's equivalent for this purpose, only £44,000 were spent on it, would he say whether the balance of £53,100 went into the Irish National Health Insurance Fund or was wholly lost to Ireland.—Mr. MONTAGU answered: There is no separate payment for the provision of certificates of incapacity for work under the National Insurance Act in England. The Exchequer grant of 2*s*. 6*d*. per insured person (equal to about £1,300,000) is a grant-in-aid of medical benefit generally, and this grant secures not only the provision of certificates but also other services in connexion with medical treatment and attendance. Any such comparison as that suggested by the honourable Member is, therefore, misleading. As regards the fourth and fifth part of the question I would refer the honourable Member to the full reply which I gave to similar questions on March 3rd.[2]

Convalescent Sailors and Soldiers.

Lord ROBERT CECIL asked the Under Secretary for War what steps the Government were taking to secure the restoration to health of convalescent sailors and soldiers discharged from hospital on sick leave, and what provision was made for soldiers and sailors invalided out of the service in consequence of illness resultant from active service.—Mr. TENNANT said in reply: Soldiers on discharge from hospital are as far as possible sent to convalescent hospitals or homes. Sick furlough limited to one week is only given in cases where the men are ready for duty or light duty. Soldiers requiring medical aid while on furlough may apply for it to the nearest military station or, in cases of emergency or if residing at a distance from a military hospital, to a civil practitioner. The new scale which will be adopted as a result of the recommendation of the Select Committee is under consideration. The question of allowing further hospital treatment for discharged soldiers who have been granted disability pensions is under consideration.

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[1] THE LANCET, Feb. 27th, 1915, p. 452.

[2] THE LANCET, March 13th, 1915, p. 576.

Tuesday, April 20th.

Territorial Medical Officers.

Sir Clement Kinloch-Cooke asked the Under Secretary for War whether the recent order arranging for the promotion to captains of all lieutenants in the Royal Army Medical Corps included Royal Army Medical Corps' lieutenants of the Territorial Forces, and, if not, would he consider the advisability of their inclusion.—Mr. Tennant replied: No, sir, it is not intended to extend the arrangement referred to to the Territorial Force as the circumstances are not the same.

The Inoculation of Soldiers.

Replying to Mr. W. Thorne, Mr. Tennant said: The privilege leave given to inoculated soldiers who were shortly proceeding to the front, to enable them to visit their homes, was not extended to men who declined to be inoculated, and who were consequently selected to remain in this country. The manner in which an officer or soldier who seeks redress for any grievance is laid down in the Army Act, and any soldier or officer who adopts other methods, is guilty of a military offence.

Rum Rations.

Mr. Molteno asked the Under Secretary for War, whether, in view of the general consensus of opinion in regard to the desirability of restricting the use of alcohol, and particularly of ardent spirits, the Secretary of State for War would consider the desirability of ceasing to issue rum in large quantities to the troops at the front.—Mr. Tennant answered: The conditions under which rum is issued to the troops at the front have been fully explained on previous occasions. It is not proposed to make any change in the issue.

Medical Officers in the Navy.

Mr. George Terrell asked the Secretary to the Admiralty whether medical officers who had withdrawn from the service previous to the war and had received a gratuity on the scale laid down in the regulations now had deductions made on their pay as representing interest on the amount of such gratuity; and whether, in the absence of any authority for the making of such deductions, he would give instructions that all such officers are to receive their pay in full.—Mr. Macnamara wrote in reply: It is a long-established rule in the Navy that an officer in receipt of an annual retiring allowance should cease to draw that allowance on becoming entitled to full pay, &c., during re-employment whether in peace or war. The same principle is applied to officers who received their retiring or withdrawing allowance in a lump sum, and an amount representing the annual value of this gratuity is accordingly abated from their active service emoluments.

Notification of Births Act.

Sir William Byles asked the Parliamentary Secretary to the Local Government Board whether having regard to the effect of the war on the statistics of births and deaths he would consider whether, either by legislation or administrative order, the Notification of Births Act, 1907, now optional in character, could be made compulsory.—Mr. Herbert Lewis answered: The Notification of Births Act imposes no duty on local authorities to follow up investigations made under it, and unless this work is undertaken, the chief value of the Act is not secured. The Department have generally considered that it is preferable to persuade local authorities to adopt the Act and to carry out health visiting and other measures for the benefit of persons whose cases are brought to their notice in pursuance of the Act, rather than simply to put the Act in force compulsorily. I may add that the Act is now in force in respect of about 75 per cent. of the total population of England and Wales, and that the question of the adoption of the Act is now under the consideration of several areas.

Wednesday, April 21st.

Panel Practitioners and Military Duty.

Mr. Charles Duncan asked the Secretary to the Treasury what, if any, arrangements were being made to secure the administration of medical benefit under the National Insurance Act in cases where panel practitioners had engaged themselves for military duties.—Mr. Acland replied: In the circumstances referred to, the Insurance Committees have to be satisfied that as satisfactory arrangements as are possible, having regard to the heavy pressure on the medical profession, are made to provide for the continued discharge of the panel duties of absent medical men by means of locum-tenents or through their colleagues acting as deputies.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Cassie, Ethel, M.B., Ch.B. Edin., has been appointed Temporary Medical Officer of Health and Schools Medical Officer for Clackmannanshire.

Desmond, M. P., L.R.C.P. & S. Edin., L F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Slievereagh District of the county of Cork.

Henderson, J. M., M.B., Ch.B. Glasg., has been appointed Medical Officer to the Barrow-in-Furness Board of Guardians.

Jones, Charles Trickey, L.R.C.P. Irel., has been appointed Deputy Medical Officer for the Ilfracombe District by the Barnstaple Board of Guardians.

Macbean, A. F., M.B., Ch.B. Aberd., has been appointed Chief School Medical Officer for the county of Aberdeen.

Sinclair, R., M.B., Ch.B. Aberd., has been appointed Assistant Medical Officer for the county of Aberdeen.

Stanley, Douglas, M.D., has been appointed Professor of Therapeutics in the University of Birmingham.

Wallace, William, M.B., C.M. Glasg., L.D.S., has been appointed Lecturer on Dental Anatomy and Physiology in the Auderso College of Medicine.

West, H. O., M.D., B.S. Lond., has been appointed Tuberculosis Officer in connexion with the establishment of a Tuberculosis Dispensary at the Metropolitan Hospital, Kingsland-road, N.E., for th boroughs of Hackney and Stoke Newington.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

Anglo-Serbian Hospital, Urnjatchka Benja, Serbia.—Surgeon.

Bath, Royal United Hospital.—Resident Medical Officer.

Belgrave Hospital for Children, Clapham-road, S.W.—Resident Medical Officer for six months Salary at rate of £100 per annum, with board, residence, and washing.

Benenden, Kent, National Sanatorium.—Assistant Medical Officer. Salary £120 per annum, with board and laundry.

Bethnal Green Infirmary, Waterloo-road, N.E.—Assistant Medical Officer. Salary at rate of £280 per annum, with apartments, board, and washing.

Birkenhead Borough Hospital.—Female Senior and Junior House Surgeons. Salary £180 and £150 per annum respectively, with board and laundry.

Birmingham City Education Committee.—Temporary Assistant School Medical Officer. Salary at rate of £300 per annum.

Birmingham General Dispensary.—Resident Medical Officer, unmarried. Salary £250 per annum, with apartments, attendance, &c.

Bootle Borough Hospital.—Senior and Junior House Surgeons. Salary £150 and £130 per annum respectively, with residence, board, and laundry.

Bournemouth, Royal Victoria and West Hants Hospital.—House Surgeon for six months. Salary £100 per annum, with board, lodging, washing, &c.

Bradford Children's Hospital.—House Surgeon. Salary £120 per annum, with board, residence, and laundry.

Bradford Poor-law Union, for St. Luke's Hospital and Union House.—Assistant Resident Medical Officer, unmarried. Salary £250 per annum, with rations, apartments, and washing.

Bristol General Hospital.—Second House Physician, House Surgeon, Casualty House Surgeon, and Resident Obstetric Officer, all for six months. Salary at rate of £150 per annum, with board, residence, &c.

Bristol Royal Hospital for Sick Children and Women.—Junior Resident Officer. Salary £100 per annum, with board, rooms, attendance, and laundry.

Bristol Royal Infirmary.—Three House Surgeons. Two House Physicians, and One Obstetric and Ophthalmic House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.

Burnley, Victoria Hospital.—House Surgeon. Salary £135 per annum, with residence, board, and washing.

Bury Infirmary.—Senior and Junior House Surgeons. Salary £175 and £150 per annum respectively, with board, residence, and washing.

Bury St. Edmunds, West Suffolk General Hospital.—Resident Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and laundry.

Buxton, Derbyshire, Devonshire Hospital.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

Canterbury Mental Hospital.—Assistant Medical Officer unmarried. Salary £250 per annum, with board, lodging, washing, and attendance.

Cardiff, King Edward VII.'s Hospital.—Resident Surgical Officer. Salary £160 per annum, with board, laundry, and apartments.

Carlisle Non-Provident Dispensary.—Resident Medical Officer. Salary £200 per annum, with apartments (not board).

Carmarthen, Joint Counties Asylum.—Temporary Second Assistant Medical Officer. Salary at rate of £200 per annum, with board, lodging, washing, &c.

City of London Lying-in Hospital, City-road, E.C. — Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, lodging, and washing.

Colchester, Essex County Hospital.—Resident Medical Officer. Salary £160 per annum, with board, washing, and residence.

Derby County Borough.—Temporary Tuberculosis Officer, unmarried. Salary £400 per annum, with board and residence.

Derby, Derbyshire Hospital for Sick Children.—Female Resident Medical Officer for six months. Salary £200 per annum.

Derby, Derbyshire Royal Infirmary.—House Physician and Casualty Officer. Salary £250 per annum, with board, residence, &c.

Evelina Hospital for Sick Children, Southwark, S.E.—House Physician for six months and House Surgeon for four months. Salary at rate of £75 per annum each, with board, residence, and washing.

Gravesend Hospital.—House Surgeon. Salary, with board residence, and washing.

Halifax County Borough.—Temporary Assistant Medical Officer of Health. Salary at rate of £300 per annum.

Halifax Royal Infirmary.—Second and Third House Surgeons, unmarried. Salary £120 and £100 per annum respectively, with residence, board, and washing.

Hammersmith Infirmary and Workhouse, Ducane-road, Wormwood Scrubs, W.—Second Assistant Medical Officer. Salary £170 per annum, with board, lodging, washing, and attendance.

Harrogate Infirmary.—Resident House Surgeon. Salary £100 per annum.

Hemel Hempstead, Herts, West Herts Hospital.—Resident Medical Officer. Salary £150 per annum, with rooms, board, and washing.

Hospital for Consumption and Diseases of the Chest, Brompton. —House Physician for six months. Salary 30 guineas.

Hull Royal Infirmary.—House Physician, unmarried. Salary £105 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging. Also Casualty House Surgeon. Salary at rate of £80, with board and lodging.

Indian Medical Service.—Ten Commissions.

Ingress Abbey Military Hospital, Greenhithe.—House Surgeon. Salary £350 per annum, with board, lodging, and washing.

Inverness, Northern Infirmary.—House Surgeon. Salary £150 per annum, with board, &c.

London Temperance Hospital, Hampstead-road, N.W.—Medical Registrar. Salary at rate of 40 guineas per annum.

London Skin Hospital, 40, Fitzroy-square, W.—Honorary Assistant Physician or Assistant Surgeon.

London Throat Hospital, 204, Great Portland-street, W.—Registrar to assist at Out-patient Clinics.

Macclesfield, Cheshire County Asylum, Parkside.—Junior Assistant Medical Officer. Salary £250 per annum, with apartments, board, laundry, &c.

Manchester Children's Hospital, Pendlebury.—Resident Medical Officer, unmarried, for six months. Salary at rate of £100 per annum.

Manchester, County Asylum, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

Manchester, Hulme Dispensary, Dale-street, Stretford-road.—House Surgeon. Salary £250 per annum, with apartments, attendance, &c.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Metropolitan Hospital, Kingsland-road, N.E.—House Physician and House Surgeon. Salary at rate of £60 per annum. Also Assistant House Physician and Two Assistant House Surgeons. All for six months. Salary at rate of £40 per annum, all with board and washing.

Middlesbrough, North Ormesby Hospital.—House Surgeon. Salary £150 per annum, with board, washing, and attendance.

Newcastle-upon-Tyne, Royal Victoria Infirmary.—Four House Physicians, Four House Surgeons, Accident-room House Surgeon, House Surgeon to Aural and Ophthalmic Department, House Surgeon to Skin and Gynæcological Department, and House Surgeon to Out-patient Dressing Department

New Hospital for Women, Euston-road, N.W.—Female House Physician, Two House Surgeons, and Obstetric Assistant. All with board, residence, and laundry. Also Assistant Pathologist. Also Resident Medical Officer at House of Recovery, New Barnet, for six months. Salary at rate of £60 per annum. Also Clinical Assistants for Monday and Saturday.

Northampton General Hospital.—House Surgeon. Salary £120 per annum, with apartments, board, washing, attendance, &c.

Northumberland, County of.—Assistant School Medical Inspector. Salary £300 per annum.

Oldham County Borough.—Assistant Schools Medical Officer. Salary £300 per annum.

Prince of Wales's General Hospital, Tottenham, N.—Honorary Dermatologist. Also Deputy Laryngologist.

Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—House Physician and House Surgeon for six months. Salary £100 per annum, with board, residence, and washing.

Reading, Royal Berkshire Hospital.—House Surgeon for six months.

Rotherham Hospital.—Senior and Junior House Surgeons. Salaries £200 and £125 per annum respectively, with board, lodging, and washing.

Royal Free Hospital, Gray's Inn-road, W.C.—Female Senior and Junior Obstetric Assistants. Salary £75 and £50 per annum respectively. Each with board, residence, &c. Also Female Junior Anæsthetist (two days weekly) and Two Female Resident Medical Officers. With board, residence, &c.

Royal Hospital for Diseases of the Chest, City-road, E.C. —House Physician (Part-time). Salary at rate of £75 per annum, with meals.

Royal London Ophthalmic Hospital, City-road, E.C.—Out-patient Surgical Officer for six months. Salary at rate of £50 per annum.

Salisbury General Infirmary.—House Surgeon and Assistant House Surgeon, unmarried. Salary £100 and £75 per annum respectively, with apartments, board, lodging, and washing.

Samaritan Free Hospital for Women, Marylebone-road, N.W.—Anæsthetist two half days weekly. Salary £15 per annum.

Sheffield Municipal Tuberculosis Dispensary.—Female Assistant Medical Officer. Salary £350 per annum.

Sheffield Royal Hospital.—Assistant House Surgeon and Assistant House Physician.

Sheffield Royal Infirmary.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.

Shrewsbury, Royal Salop Infirmary.—House Physician. Salary at rate of £110 per annum, with board and apartments.

Somerset County Council.—Assistant Tuberculosis Officer. Salary £350 per annum.

South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Senior House Surgeon. Salary £150 per annum, with residence, board, and washing.

Stafford County Mental Hospital.—Female Temporary Assistant Medical Officer. Salary £250 per annum, with board, apartments, and laundry.

Stoke-on-Trent, North Staffordshire Infirmary, Hartshill.—Resident Surgical Officer, unmarried. Salary £300 per annum. Also Two House Surgeons and One House Physician, unmarried. Salary in each case £150 per annum, all with board, residence, and laundry.

Swansea Education Committee. — Temporary Assistant School Medical Officer. Salary £300 per annum.

Taunton and Somerset Hospital, Taunton.—Senior House Surgeon. Salary £250 per annum, with board, lodging, and laundry.

Ventnor, Isle of Wight, Royal National Hospital for Consumption and Diseases of the Chest on the Separate Principle. —Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with board, lodging, &c.

Warrington Infirmary and Dispensary.—Junior House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.

Warrington, Lord Derby War Hospital.—Chief Resident Physician. Salary £1 3*s.* 6*d.* per day, with board, lodging, and washing. Also Resident Physician and Surgeon.

Welsh Metropolitan Military Hospital, Whitchurch, near Cardiff. —Chief Resident Surgeon and Chief Resident Physician. Salary £1 3*s.* 6*d.* a day, with board, lodging, &c.

West Ham and Eastern General Hospital, Stratford, E.—House Physicians. Salary £120 and £100 per annum, with board, residence, and washing.

West Ham Union.—Second Assistant Resident Medical Officer at Infirmary, Whipps Cross-road, Leytonstone, N.E. Salary £250 per annum. Also Deputy Medical Officer at Sick Home, 95, Forest-lane, Forest Gate, E. Salary £250 per annum. Also Female Assistant Medical Officer at Workhouse, Union-road, Leytonstone, N E. Salary £140 per annum. All with usual residential allowances.

Whitehaven and West Cumberland Infirmary.—House Surgeon. Salary £150 per annum, with board, lodging, and attendance.

Worcestershire County Council Education Committee.—Female Temporary Assistant School Medical Officer. Salary £350 per annum.

York Dispensary.—Female Resident Medical Officer, unmarried. Salary £240 per annum, with board, lodging, and attendance.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy for Certifying Surgeon under the Factory and Workshop Acts at Staindrop, in the county of Durham.

Births, Marriages, and Deaths.

BIRTHS.

Appleyard.—On April 14th, at 2, Marlborough-road, Bradford, the wife of William Appleyard, F.R.C.S. (Captain, 2nd/6th West Yorkshire Regiment), of a son.

Barnicot.—On April 13th, at Queen-street, Hitchin, the wife of Joseph Barnicot, M.D., of a daughter.

Dick.—On April 13th, at Tadworth, Surrey, the wife of F. A. Dick, M.B., of a son.

Kennedy.—On April 12th, at Priory-road, Wantage, Berks, the wife of W. D. Kennedy, M.B., of a daughter.

Ledward.—On April 16th, at Norton Way, Letchworth, Hertfordshire the wife of H. D. Ledward, M.B., of a daughter.

Tebbutt.—On April 18th, at Belsize-park-gardens, Hampstead, the wife of E. S. Tebbutt, L.D.S., D.D.S., of a daughter.

Tivy.—On April 12th, to Dr. and Mrs. Cecil B. F. Tivy, "Lindthorpe," Brixham, South Devon, a daughter.

MARRIAGES.

Collier—Liversidge.—On April 17th, at St. Luke's, Chelsea, Walter Edgar Collier, M.R.C.S., L.R.C.P., to Kathleen May, third daughter of the late Jarratt Liversidge, of Ringley, Reigate.

Fenn—Shuttleworth.—On April 14th, at St. Peter's Church, Belsize-park, N.W., Charles Edward Fenn, M.D., to Edith Elizabeth, only daughter of Dr. and Mrs. G. E. Shuttleworth, of Hampstead.

Gardner—Milne.—On April 17th, at St. George's Presbyterian Church, Southend-on-Sea, Thomas Gardner, M.D. Edin., to Muriel Rose, eldest daughter of Captain and Mrs. Oswald I. Milne, of Parkside, Chalkwell-gardens, Westcliff, Essex.

Garry—Marr.—On April 14th, at St. Clare's, Sefton Park, Dr. Michael Garry, to Rita, only daughter of Edward L. Marr, of Grove House, Sefton Park, Liverpool.

Hall—McCallum.—On April 15th, at All Saints', Margaret-street, W., Edward Wilson Hall, M.R.C.S. Eng., L.R.C.P. Lond., to Annie Maud, younger daughter of the late Colin McCallum, M.B., C.M. Edin., of Anstruther, Fife, N.B., and of Mrs. McCallum, of Lascelles-terrace, Eastbourne.

Ilott—Hodge.—On April 14th, very quietly, at All Saints', Margaret-street, W., Dr. H. J. Ilott, of Bromley, to Norah Mildred Hodge, third daughter of Mr. Edward Hodge, of Exeter.

PULLING—GREY.—On April 8th, at the Church of St. Michael and All Angels, Sunninghill, John Bernard Pulling, M.B., B.S. Cantab., Faringdon, Berks, to Sybil Constance Grey, daughter of the late Mr. William Lewis Grey, of Pykara, Nilgiris, S. India.

STUART—SHELDON.—On April 10th, at St. Luke's Church, Kingston-on-Thames, Francis Wilson Stuart, M.D., M.Ch., to Constance Fanny, only daughter of Mr. and Mrs. A. Sheldon, Birchfields, Birmingham.

WRIGLEY—MITCHELL.—On April 17th, at the Parish Church, Llandulas, by the Rev. Canon Roberts, assisted by the Rev. J. W. Thomas, Frank Graham Wrigley, M.D., third son of the late Roscoe Wrigley, of Oldham, and Mrs. Wrigley, of Didsbury, Manchester, to Marjorie Mary, eldest daughter of the late John Mitchell and Mrs. Mitchell, of Edinburgh.

DEATHS.

BENDLE.—On April 13th, at Sunnyside, Oldfield-road, Bath, James Huxtable Bendle, M.B., M.R.C.S., aged 40 years.

BOMFORD.—On April 12th, at St. Thomas's Home, London, Surgeon-General Sir Gerald Bomford, K.C.I.E., M.D., late Director-General, Indian Medical Service, aged 63 years.

DUNCAN.—On April 12th, at Oxford-road, Finsbury Park, N., Frederick Percy Duncan, M.R.C.S., L.R.C.P., in his 43rd year.

JOLLYE.—On April 16th, at 41, Nelson-road South, Great Yarmouth, Edward William Jollye, Surgeon, formerly of Donington, near Spalding, aged 81 years.

KAY.—On April 13th, at Worthing, William Kay, M.R.C.S., L.R.C.P., of Bentley, Hampshire, in his 63rd year.

TUNNICLIFFE.—On April 15th, suddenly, at Radlett, Edwin Thomas Mosse Tunnicliffe, M.R.C.S. Eng., aged 54 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births Marriages, and Deaths.

BOOKS, ETC., RECEIVED.

AMERICAN CLIMATOLOGICAL ASSOCIATION, Philadelphia.
Transactions for the Year 1914. Vol. XXX.

BALE, JOHN, SONS, AND DANIELSSON, LIMITED, London.
Defective Children. Edited by T. N. Kelynack, M.D. Price 7*s.* 6*d.* net.
Scheme for Dealing with Tuberculous Persons in the County of London: its Application to other Cities, with some Observations on the National Organisation of the Campaign against Tuberculosis. By D. Barty King, M.A., M.D. Edin., M.R.C.P. Lond. & Edin. With Foreword by Professor Sir William Osler, Bart., M.D., F.R.C.P., F R.S. Price 5*s.* net.

CHURCHILL, J. AND A., London.
Malay Poisons and Charm Cures. By John D. Gimlette, M.R.C.S., L.R.C.P. Price 3*s.* 6*d.* net.

DENT, J. M. AND SONS, LIMITED, Bedford-street, Strand, London, W.C.
A Plea for the Thorough and Unbiassed Investigation of Christian Science and a Challenge to its Critics. By Charles Herman Lea. Second and revised edition. Price 1*s.* net.

HODDER AND STOUGHTON, London, New York, and Toronto.
The Way of the Red Cross. By E. Charles Vivian and J. E. Hodder Williams. Price 2*s.* 6*d.* net

INSTITUT D'ESTUDIS CATALANS, Palace de la Diputacio, Barcelona.
Treballs de la Societat de Biologia Any Primer. 1913. Publicats sota la Direcció de A. Pi Suñer. Price 10 ptes.

LIPPINCOTT, J. B., COMPANY, Philadelphia and London.
The Diseases of Children. Edited by Dr. M. Pfaundler and Dr. A. Schlossmann. English translation by Dr. H. L. K. Shaw and Dr. Linnæus La Fétra. With introduction by Dr. L. Emmett Holt. Vol. VII.: Diseases of the Eye and Disorders of Speech. Price 21*s.* net.

LIVINGSTONE, E. AND S., Edinburgh.
A Text-book of Medical Jurisprudence and Toxicology. By John Glaister, M.D., D.P.H. Cantab., F.R.S.E. Third edition. Price 15*s.* net.

NISBET, JAMES, AND CO., LIMITED, London.
Operative Treatment of Chronic Intestinal Stasis. By Sir W. Arbuthnot Lane, Bart., M.S., F.R.C.S. Third edition. Price 10*s.* 6*d.* net.

SAMPSON LOW, MARSTON, AND CO., London.
The Chronicles of the Imp: A Romance. By Jeffery Farnol. And an appreciation of the author and his work by Clement K. Shorter. Price 3*s.* 6*d.*

SCIENTIFIC PRESS, LIMITED, London.
The Nervous System. By Dr. Ash. Price 1*s.* net.
The Muscular System. By H. Burrows, F.R.C.S. Price 1*s.* net.

SMITH, ELDER, AND CO., London.
The Minor Horrors of War. By A. E. Shipley, Sc.D., F.R.S., Master of Christ's College, Cambridge. Price 1*s.* 6*d.* net.

STANFORD UNIVERSITY, California.
Introduction to the Study of the Endocrine Glands and Internal Secretions (Lane Medical Lectures, 1913). By Sir Edward Schäfer, Regius Professor of Physiology, Edinburgh University.

UNIVERSITY PRESS, Cambridge.
Zoology: an Elementary Text-book. By A. E. Shipley, Sc.D., Hon. D.Sc. (Princeton), F.R.S., and E. W. MacBride, M.A. Cantab., D.Sc. Lond., F.R.S. Third edition. Price 12*s.* 6*d.* net.

WHITTAKER AND CO., London.
Modern Illuminants and Illuminating Engineering. By Leon Gaster and J. S. Dow. Price 12*s.* 6*d.* net.

Notes, Short Comments, and Answers to Correspondents.

A HEALTHY BRITISH DEPENDENCY.

THE Cayman Islands, forming a dependency of the colony of Jamaica, are situated between the meridians 79° 44′ and 81° 26′ parallels of 19° 41′ and 19° 46′ N., and consist of three islands—Grand Cayman, Cayman Brac, and Little Cayman—with a total area of 225 square miles. They are said to have been discovered by Christopher Columbus and to have been originally a rendezvous for pirates. The principal town is Georgetown, in Grand Cayman. The government is administered by a Commissioner, Mr. A. C. Robinson, who in his report for 1913–14, just received at the Colonial Office, states that the islands are among the healthiest places in the world. There are no cases of illness attributable to climatic conditions. The weather is warm for the greater part of the year. The prevailing breeze is from the south-east from April until October, and the cool season begins with a change of the wind to the north and north-west in the early part of November. In the hot months the average temperature is 83° F. in the morning, 89° at midday, and 86° in the evening; in the cool months (November to March) it is 71° in the morning, 80° at midday, and 74° in the evening. A census taken in June, 1911, showed the total population of the islands to be 5564. Of these 2322 are white, 2211 coloured, and 1031 black. 3087 were returned as able to read and write, 749 as able to read only, and 1728, including children, as illiterate. There are many islanders who attach no importance whatsoever to the education of their children and who do not consider even reading or writing as in any way essential to a child's future welfare. During 1914 there were 195 births, 99 males and 96 females. Of these 160 were legitimate and 35 illegitimate. In the same period there were 39 deaths, 21 males and 18 females. There is a small building kept for the purpose of isolating infectious diseases, but it is not generally used. Government medical officers are appointed for the Lesser Islands and Grand Cayman, whose duty it is to visit all the outlying districts. The mosquito season begins in April and continues until September, when they begin to abate, and from November to February almost disappear. Householders adopt the method of lighting a smoke fire to ward off the attacks of these insects, which swarm in myriads and render life a torture to man and beast. A few houses are mosquito-screened. There are fortunately very few of the anopheline or malaria-transmitting variety. Although these islands are practically immune from the recognised mosquito-borne diseases—as malaria, yellow fever, and filariasis—the mosquito is nevertheless seriously detrimental to the health in other respects, the conditions of anæmia and general debility met with being attributed by the Government medical officer to the blood-sucking power of these insects. Swamps are found in various places, but as these are below the level of the sea they could only be drained by a large expenditure of money. So far as it is possible to ascertain, the people generally seem to display a more marked interest in hygiene, and, as this subject is taught in all the Government schools and particular importance attached to it, the rising generation may be taught to realise to the full the benefits to be derived from living in healthy surroundings.

RABIES AND QUARANTINE FOR DOGS.

FROM time to time the newspapers report cases in which persons are summoned for endeavouring to evade the restrictions placed by the Board of Agriculture upon the introduction into this country of dogs from abroad, and it is fairly well known that ladies often bring, or endeavour to bring, small pet dogs in by smuggling them under cloaks and other garments. Such cases would not be in the same class as that of a dog which recently was brought to England from Northern Nigeria and fortunately was not smuggled, but was duly placed in quarantine where it sickened and died, subsequent investigation by the officers of the Board of Agriculture showing that the cause of death was rabies. The loyal acquiescence of all in the salutary regulations referred to is a public duty.

THE DANGER OF CARTS AS PLATFORMS.

A HORSE and van are often hired by orators who wish to address the public from a convenient moving platform in the open air, but there is a danger in so doing when standing at the rear of the cart facing the public, without sufficient protection from the tailboard as a small parapet, and without careful attention to the horse's head. This week several public recruiting meetings have been held in different parts of London, and one such meeting was addressed by a soldier supporting himself on two crutches, standing at the rear of a van. He called for one recruit to take his place in the ranks, and when one came forward there was clapping of hands. Simultaneously an electric tramcar passed, and probably the combined noises frightened the horse, which gave a jerk forward, with the consequence that the crippled soldier was thrown headlong on to the ground amidst the groans of the crowd. He might have been seriously hurt, but he was evidently plucky, for he rose again, and in a few minutes was assisted up and reoccupied his former dangerous position, although he was pale and evidently shaken.

WHISKY, ABSINTHE, AND BEER.

THE subject of "Drink and Prohibition" is now receiving much Government, public, and private attention. Whisky is the spirit chiefly consumed, perhaps, by the working classes. The "uisge beatha," "usque baugh," or "water of life," was originally known officially to the Government under the name of "aqua vitæ," and those who are interested in its history will find a few particulars in THE LANCET of Jan. 28th, 1905, p. 240, under the heading of "Definition of Whisky in the Olden Times," from which it will be seen that the Scotch did not fear their own product but did fear the admixture of nauseous foreign spirit as an adulteration. Before the Royal Commission on Whisky and other Potable Spirits, whisky was defined as "a spirit obtained by distillation from a mash of cereal grains saccharified by the diastase of malt," and no distinction was allowed between "pot-still" and "patent" spirit. Whisky is generally considered to be mild in effects compared with absinthe, which has lately been prohibited in France, but no whisky is mild which has not been well matured. It would certainly be of advantage that beer should take the place of whisky, but much beer is too strong. A light or lager beer is seemingly proposed to be brewed by direction of the Government and sold in this country, in place of the heavy beers. It is interesting to recall that by the 4th and 5th of Philip and Mary it was enacted that "No bere bruer to brewe nor sell to any typpler, or other person, any bere called doble doble bere, but only two sorts of bere—viz., best bere and small bere, upon forfeit of ye bere and cask." To understand this more fully it is necessary to recollect that the "typpler" was what we now call the "publican," and not the "constant toper" or the publican's frequent customer. The dangers of too strong beer have long been recognised, but it may not be easy to make a very light beer popular.

CHILDREN'S FRESH-AIR MISSION.

THE annual meeting of this mission will be held in Staple Inn Hall, Holborn, E.C. (by permission of the Institute of Actuaries), on Wednesday next, April 28th, at 4 P.M., when the Bishop of Islington will preside. The following speakers in support of the fund are announced: Alderman Sir W. H. Dunn, Miss Paget, Mr. W. Pett Ridge, and Mr. Ernest E. Wild, K.C.

A BELATED NOTIFICATION.

ON April 17th we received through the post from the Secretariat of the III. Internationaler Kongress für Gewerbekrankheiten, Vienna, the following notification:—

> August, 1914.
>
> DEAR SIR,—The International Congress for Occupational Diseases which had to take place between the 21th and 26th of September in Vienna, has to be given up on account of the state of war.—Yours faithfully,
>
> (Signed) Dr. TELEKY (?)

The exact date in August is, like the signature, undecipherable. The card, however, is surprisingly fresh and new-looking considering the time that it has been *en route*.

A USEFUL ANTISEPTIC SWAB.

WITH the object of minimising as far as possible the effects of septic poisoning of wounds received on active service, Dr. Campbell Highet, honorary medical officer to the Worcester Voluntary Aid Detachment, has devised a useful swab for applying an antiseptic solution. A glass ampoule is wrapped in a pad of plain gauze about 3 inches in diameter, and of 8 to 16 layers. The gauze is gathered round the thin neck of the ampoule, where it is tied with thread after the whole has been wrapped in an impervious covering. The ampoule holds half a dram or more of a solution recommended by Mr. G. Lenthal Cheatle, C.V.O., C.B., in the *British Medical Journal* (vol. ii., 1914, p. 1006), consisting of 1 in 20 carbolic acid and 1 in 500 mercury perchloride in absolute alcohol coloured with rosaline, the latter acting as a mordant. For use the ampoule is fractured by a sharp blow from any hard object, the impervious covering (which prevents leakage in case the glass container is accidentally broken) torn away, and the surface of the wound brushed with the impregnated swab. The swabs, which cost 2½*d*. each, are made by Messrs. J. Richardson and Co., and their inexpensiveness, portability, and easy manipulation should commend their use.

THE PAY OF GERMAN MILITARY MEDICAL OFFICERS.

"THE rate of pay of German military medical officers may be of interest to our own medical officers," writes a frequent correspondent. "The following appear to be the rates, unless they have been altered in any way since the war began. Sanitätsinspekteure, M. 10,260; generalärzte (surgeon-generals), M. 8772; general-oberärzte (colonels) and oberstabsärzte (lieutenant-colonels), M. 6102 to M. 6552; stabsärzte (staff-surgeons), M. 3400 to M. 5100; oberärzte (surgeons) and assistenärzte (assistant surgeons), M. 1700 to M. 2400; and unterärzte (subordinates or orderlies), M. 745. These are annual salaries, but may be supplemented by special house allowance, lodging allowance, or horse allowance. A mark may be reckoned roughly as a shilling."

DIABETIC CLINICAL CHARTS.

Messrs. J. B. Lippincott Company, of John-street, Adelphi, London, W.C., have submitted to us a convenient form of clinical chart fcr permanently recording the essential facts in regard to the urine, &c., in diabetic cases, both in hospital and private practice. They are printed on good paper, measuring 11 by 8 inches, and sold in packages of 50 at the price of 2*s*. 6*d*.

A. S. G.—One of the best tests for blood in urine is that devised by Meyer. It contains phenolphthalein, grm. 2; caustic potash, grm. 20; and distilled water, grm. 100. Mix and raise to boiling-point, then add powdered zinc, grm. 10; maintain at boiling-point for five minutes. Shake up and filter rapidly as soon as decoloration takes place. Add 1 c.c. of the reagent to a small quantity of the urine to be tested, also a few drops of peroxide of hydrogen when, if blood be present, a reddish colour is produced which is absolutely characteristic. With regard to the presence of urobilin in urine, Florence's test is easy of application and reliable: pyridine, alcohol, and chloroform āā 50 grm., acetate of zinc 7·50 grm. Add to the suspected urine twice its volume of the reagent and set aside. If positive a very characteristic fluorescence is produced.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Mr. H. Hartridge and Mr. A. V. Hill: The Transmission of Infra-red Rays by the Media of the Eye, the Transmission of Radiant Energy by Crookes's and other Glasses, and the Radiation from Various Light Sources (communicated by Mr. W. B. Hardy).—Mr. E. Beard and Mr. W. Cramer: Surface Tension and Ferment Action (communicated by Sir E. Schäfer).—Mr. W. Cramer: Surface Tension as a Factor controlling all Metabolism (communicated by Sir E. Schäfer).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY.

SECTION OF ODONTOLOGY (Hon. Secretaries—F. Coleman, F. R. Smyth): at 8 P.M.

Adjourned Discussion:

On Dr. Ewan Waller's paper, The Influence of the Thyroid Gland on Dental Caries (published in the March number of the Proceedings of the Section of Odontology).

Paper:

Dr. J. Sim Wallace: The Principles of Dietetics.

SECTION OF MEDICINE.—The Members of this Section are specially invited to attend the discussion on Dr. Waller's and Dr. Sim Wallace's papers (as above).

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.—The Members of this Section are specially invited to attend the discussion on Dr. Sim Wallace's paper (as above).

TUESDAY.

SECTION OF MEDICINE (Hon. Secretaries—John Fawcett, Charles R. Box): at 5.30 P.M.

Annual General Meeting.—Election of Officers and Council for Session 1915-1916.

Papers:

Dr. Arthur J. Hall: Notes on (1) A Case presenting Symptoms of Lymphatic Leukæmia of Acute Onset terminating in Complete Recovery; (2) Some Cases of Myelogenic Leukæmia.

Dr. F. Parkes Weber: An Instance of Long Quiescence of Leukæmia.

To be followed by a discussion on the Treatment of Leukæmia

WEDNESDAY.

SECTION OF PSYCHIATRY (Hon. Secretaries—Bernard Hart, G. F. Barham).

A Clinico-Anatomical Meeting will be held at the Pathological Laboratory, Claybury Asylum, at 3.30 P.M.

Dr. Armstrong-Jones will show some cases of Hypothyroidism.

Dr. F. W. Mott, F.R.S.: Microscopical Demonstration of Changes in the Central Nervous System in Hypothyroidism.

Dr. Kojima: The Examination of the Thyroid Gland in 100 Successive Cases of Death, with Special Reference to Hypothyroidism.

Dr. F. W. Mott, F.R.S.: Microscopical Demonstration of the Choroid Plexus in Relation to Lipoid Constituents of the Epithelial Cells.

Dr. Sano: Anatomical Investigations regarding Speech Functions.

ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.

MONDAY.—8 P.M., Cantor Lecture:—Dr. D. Sommerville: Foodstuffs. (Lecture I.)

HUNTERIAN SOCIETY, Barbers' Hall, Monkwell-street, E.C.

WEDNESDAY.—8 30 P.M., Annual General Meeting. 9 P.M., Dr. P. Stewart: Demonstration of Injuries to the Brain sustained during the War (illustrated by lantern slides).—Dr. C. J. Thomas will give an account of his Experiences in Germany during the War.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

Museum Demonstrations for Advanced Students and Medical Practitioners:—

MONDAY.—Mr. Shattock: Specimens of Diseases of Arteries.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. [illegible] P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. [illegible] P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

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An Address

ON

WOUND INFECTIONS

AND ON

SOME NEW METHODS FOR THE STUDY OF THE VARIOUS FACTORS WHICH COME INTO CONSIDERATION IN THEIR TREATMENT.

Delivered before the Royal Society of Medicine on March 30th,

By COLONEL SIR A. E. WRIGHT, M.D., F.R.S.,

A CONSULTING PHYSICIAN TO THE EXPEDITIONARY FORCE.

(*From the Research Laboratory attached to No. 13 General Hospital, Boulogne-sur-Mer.*)

(*Concluded from p. 847.*)

Treatment by Vaccine-therapy.

I emphasised at the outset of this discourse that Treatment by Vaccine-therapy could take rank only as ancillary to Treatment by Physiological Methods. In *treatment by physiological methods* we take the antibacterial agencies of the patient just as they are, and do our best to bring them into more effective application on the infective microbes. In *vaccine-therapy* we seek to reinforce those agencies. We endeavour to increase the bacteriotropic power of the blood, and to modify the chemotropic sensibility of the leucocytes. And, now that we have come to appreciate its importance, we should seek to increase also the antitryptic power of the blood fluids.

Let us try to see how the case for vaccines and vaccine-therapy stands, keeping always before us the great practical issue as to how much clinical benefit can in the particular case be secured for the patient, and arranging for the purposes of our survey the multifold applications of vaccines under six subheadings.

1. *Prophylactic employment of vaccines.*—This is not only from the theoretical point of view the best of all methods of employing vaccines, but it is also the method which gives in practice the maximum of advantage. We have only to look to the results obtained by prophylactic vaccination against small-pox, cholera, plague, and typhoid fever.

2. *Employment of vaccines in the treatment of localised bacterial inroads.*—Next to prophylactic inoculations, this gives the best results. And the results, in the respect that they are almost immediately manifest to the eye, are even more dramatic than those of any preventive inoculation. Perhaps the most rapid and convincing results are those obtained by small doses of streptococcic vaccine in lymphangitis and erysipelas; by staphylococcic vaccine in furunculosis, when the boil is just beginning to develop; and by minimal doses of tuberculin in phlyctenular affections of the conjunctiva.

3. *Employment of vaccines in dealing with unopened abscesses and other localised infections where the microbes cannot be reached from the blood stream.*—Vaccines are here, so far as appears to clinical inspection, quite inoperative.

4. *Employment of vaccines in the treatment of localised infections associated with heavy auto-inoculations.*—The scientific application of vaccines in these cases is extremely difficult and laborious; and the results which are obtained—and those obtained in the treatment of developed phthisis by tuberculin supply a good example—are not very convincing.

5. *Employment of vaccines in the treatment of undrained wounds infected by sero-saprophytes.*—There is not yet a sufficient body of experience to decide the question as to whether benefit can be obtained from vaccines in these cases. The question will be further discussed below in connexion with the wound infections of the war.

6. *Employment of vaccines in the treatment of septicæmic infections, and in particular streptococcic septicæmias.*—Up to the present—except perhaps in certain series of experiments relating to typhoid fever—vaccines have on the whole given very disappointing results. But it will be obvious to consideration, that as we advance through the whole series of applications—from prophylactic application to the employment of vaccines in septicæmias—the conditions are becoming progressively more difficult; so that success in treatment of septicæmias, if it is ever achieved, will be the very final achievement of vaccine-therapy.

We have now prepared the ground for considering what has been obtained by the use of vaccines in the treatment of wound infections in this war.

I have in connexion with this heard the opinion of a very distinguished French surgeon—pronounced after watching the effect of vaccines upon, I should think, undrained wounds and septicæmic infections—that they had never done any good. I shall, by my general survey above, at least have put you on your guard against generalising from one class of cases to all other cases. Let us now take each class of case separately, and ask ourselves whether in this vaccines have rendered any service. I think we shall then see that things work out everywhere in accordance with scientific law.

1. *Prophylactic inoculations of "antisepsis vaccines."*—If prophylactic inoculations of this kind have not been undertaken in our army, it has not been because a supply of antisepsis vaccines has not been at hand, but because the idea of undertaking such inoculations has not appealed to the individual medical officers who have given first aid to the wounded. And if any prophylactic inoculations have been undertaken, this can have been only on a very small scale; and the fact has not transpired. To be considered therefore here is only the question as to what we should on *a priori* grounds be justified in expecting from prophylactic inoculations against wound infections, undertaken upon the wounded. The answer is, I think, not doubtful. We might justifiably hope in a proportion of cases to sterilise the upper reaches of the wound which would be less heavily implanted; and perhaps in isolated cases—those in which we have a comparatively light sowing of microbes—to sterilise the whole wound. Moreover, if we could employ vaccines in combination with *physiological drainage* (I mean by that: free outpouring of lymph obtained by the use of a lymphagogic solution) we might, I think, hope to stave off infection in a fairly large proportion of cases. But—and I have already, though perhaps not emphatically enough, drawn your attention to this in connexion with prophylactic applications of antiseptics—it will, when we set out to sterilise a wound, nearly always be a question of achieving either all we want, or nothing. To leave behind, especially in the upper reaches of a wound, a few microbes, which immediately set to work and multiply, amounts, from the point of view of the future of the wound, to exactly

the same as leaving behind alive the whole original population. If one really intends a war of extermination there must be no remissions; and if our first effort with vaccines and physiological drainage fails, we must immediately follow up with further efforts.

2. *Employment of "antisepsis vaccines" in cases where the microbes make an irruption into the neighbouring tissues.*—It is in connexion with projectile wounds not very uncommon to see the infecting microbes breaking bounds, and making an irruption into the neighbouring tissues. This will occur either in a wound which has not been laid open, or where the lymph flow has stanched, and the microbes have been imprisoned in an infiltrated wall. The bacterial irruption may follow the course of the lymphatics as a lymphangitis; or it may take the form of an erysipelas or cellulitis. In these forms of infection occurring in connexion with projectile wounds, vaccines give exactly the same dramatic effects as in the small wounds of civil life—the only difference being that when the irruption has been beaten back we have in the case of projectile wounds still the original focus of infection to deal with; and have, unless we improve the condition of the wound, always to be upon our guard against a renewal of the irruption.

3. *Employment of "antisepsis vaccines" in connexion with well-drained wounds.*—When we have in a wound quite unobstructed mechanical drainage —such, for instance, as is proved by amputation without flaps—we have, from the point of view of the immunologist, conditions exactly parallel to those which obtain when microbes make a first irruption into healthy tissues. In other words, we have here—and probably also where we have good physiological drainage—brought to bear upon the microbes an ample force of phagocytes in conjunction with a rapid, as the case may be, percolating or outflowing stream of lymph. As a consequence, vaccines give in these cases results which are so strikingly favourable as to arrest the attention of every beholder.

4. *Employment of "antisepsis vaccines" in imperfectly drained wounds.*—An overwhelming proportion of projectile wounds which are under treatment in hospital would, regarded from the point of view of the mechanical conditions, come into the category of imperfectly drained wounds. And this is as it must be. The conservation of the wounded limb is clearly the first object of the surgeon; and the treatment of the bacterial infection is quite subordinate. For example, no one could ask that a leg which had been perforated by a bullet should be cut free from all its attachments to give better drainage to the infected track.

Now it might be legitimate to say that these undrained wounds were analogous to the unopened abscesses referred to above; were it not that this comparison would do much less than justice to the difficulties which confront the immunisator in the wound in which pus accumulates. Not only have we in the recesses and backwaters of such a wound conditions which make it impossible for the antibacterial agencies of the body to establish by their mass effect a position of superiority over the microbes; but we have in the corrupted discharges and the multiform bacterial growth which they harbour, obstacles to successful immunisation such as are never encountered in an unopened abscess cavity. It is therefore not to be expected that we should in these cases see—and in point of fact we do not see—after the exhibition of vaccines any diminution in the pus which pours from the wound.

None the less we shall do well carefully to consider in connexion with the employment of vaccines in the treatment of imperfectly drained wounds certain questions. It is clearly a matter for consideration whether—despite the fact that the output of pus from the wound is not diminished —there may not be some useful clinical result from the vaccines. It is quite likely that there is such an effect; and that it takes the form of a "nibbling" at the infection in those parts of the wound lying above the ground level of the pus; a better entrenchment against the microbes; and, behind this, a massing of reserves which would be brought to bear if the microbes were to irrupt into the surrounding tissues. In short, it is not unreasonable to think that the antisepsis vaccines might aid the surgeon in his conservative surgery, and might enable him to hold on longer when trying to save a limb.

Two further questions—questions which also cannot yet find answers—come up for consideration in this place. The one is the question whether it would not be possible in many cases to convert by physiological drainage an undrained, into a drained, wound, and then to obtain good results by the use of vaccines. The other is the question as to whether or no the bacteriotropic substances produced in response to antisepsis vaccines would come into operation upon serosaprophytic microbes in corrupted discharges, and in lymph whose antitryptic power has been artificially diminished.

5. *Employment of "antisepsis vaccines" in septicæmias supervening on wound infections.*—On this question there is nothing that can be usefully said other than that, until scientific knowledge has progressed much beyond where it is now, it might be well to act upon the suggestion made above with regard to the possible utility of antisepsis vaccines in staving off septicæmic infections.

We now at the end of our survey come to the summary.—That summary would clearly be, that the results of the inoculation of "antisepsis vaccines" have conformed in everything to scientific expectation. Of the five possible applications of vaccine-therapy, the *second* and the *third* have, according to anticipation, given strikingly favourable results. The *fourth* and the *fifth*—but perhaps certain reserves may be made in connexion with the *fourth*—have given, as anticipated, very unfavourable results. And that prophylactic employment of antisepsis vaccines, which has not yet been put to probation, would seem eminently deserving of an extended and careful trial, preferably in conjunction with physiological drainage.

EPILOGUE.

And now, except for a few concluding words, I have completed what I had to say. Up to this point we have considered only the scientific problems which confront us in wound infections. What we have now to consider is how this, and similar researches, and all that new clinical experience which has won in this war, can be made useful to the wounded.

This is a question of setting up machinery for directing and coördinating the work of the Medical Officers engaged in the treatment of the sick and wounded. And, I take it, on a question of that kind the Medical Profession at home will have a voice, and, if unanimous, perhaps even have a deciding voice.

In order to enable you to judge what changes in the system would be required to give effect to the idea that Medical Officers should bring into application the latest lessons of experience and science, I will venture to remind you how the Medical Service of the Army is at present organised.

We have in the Army Medical Service, as it seems to me, three different and distinct services—a *Service of Administration*, a *Service of Hygiene and Sanitation*, and a *Service for the Treatment of the Sick and Wounded.*

The Service of Administration—and among the three services it comes easily first in order of importance—takes charge of the wounded man on the battle field; conveys him first to the dressing station, field hospital, and clearing hospital which are ranged one behind the other at the front; thence transports him in an ambulance train to the hospitals at the base; afterwards embarks him in a hospital ship; and, at the end of his journey, provides him with hospital accommodation at home. The Service of Administration has further to see to the feeding, clothing, bedding, nursing, and medical treatment of the man in hospital, and in transit; has to look after all manner of surgical and medical stores and equipment—besides providing in a thousand other ways for the proper working of the hospitals and hospital camps.

The *Service of Sanitation* has to protect the army against epidemic disease by attending to water-supply, conservancy, and antityphoid inoculation. It has to keep a watchful eye on every case of infectious disease; to detect carriers; to equip, and man, the bacteriological laboratories required for this purpose; and to intervene in ways too numerous to mention to prevent the dissemination of infection.

The duties in connexion with the aforesaid services devolve almost exclusively upon the permanent officers of the Royal Army Medical Service. Their work, as everyone at the seat of war knows, has been quite marvellously well done. And what stands already very high in the esteem of all the world, needs no more words of praise from me.

There remains the *Service for the Treatment of the Sick and Wounded.* After supplying all the multifarious duties just enumerated, there are very few Medical Officers of the permanent staff of the Royal Army Medical Corps left over. Hence nearly the whole care of the sick and wounded has fallen to the Civil Practitioners enlisted for temporary service with the Royal Army Medical Corps. For this, if for no other reason, it must be the special concern of the Civil Profession to do all that in it lies to help the Medical Staff of the Army to employ to the best advantage the Civil Practitioners now serving as Medical Officers in Military Hospitals.

What has been done in the way of regulating the work of these new-joined medical officers, has been to transplant practically unaltered into the military hospitals the organisation under which medical practitioners work in civil life and in peace.

The treatment of the sick and wounded is committed, as it is in private and hospital practice at home, into the hands of individual practitioners, there being assigned to each a certain number of patients, or a ward. And just as at home, each medical man is in practically independent charge of his cases, and is free to follow whatever treatment appeals to him; so is it in the Military Hospitals. And just as at home the free exercise of private judgment carries with it an exclusive responsibility, saving only in those cases where a consultant is called in to advise; so also is it in the Military Hospitals.

Now, I submit that this unchartered freedom can work for good only in conditions such as those which surround us at home. At home, the practitioner finds himself practically always upon ground with which he is familiar. The cases which he deals with in his practice are similar to those he has seen treated in hospital. And if he should find himself upon unfamiliar ground he will, before he need take action, have time to inform himself. Moreover, though new science filters in slowly, it does filter in. And, finally, when the medical practitioner at home makes a new experiment in treatment, he—and this is the all-important point—does learn what results. He can therefore profit from the teachings of experience.

Now, the conditions in military hospitals abroad are quite different from these. The practitioner is there on quite unfamiliar ground. He has to confront unfamiliar problems—problems in connexion with projectile wounds and wound infections. He has to take immediate action. He has very little opportunity to find out what has happened in similar cases. And lastly—and you will see that upon this point everything pivots—has very little opportunity of seeing the results of his work, and learning whether his treatment has been wrong or right. For the military hospitals in France, both at the front and also at the base, have now, through military necessity, become little more than clearing hospitals, from which cases, if at all fit to travel, are immediately sent forward upon their homeward journey.

There are thus lacking in the military hospitals in France all those provisos and safeguards which alone can make a system in which each medical man is a guide to himself successful. And carried out without those safeguards that system is unjust both to doctor and patient.

The doctor feels himself left in the lurch when he is not warned off from trying experiments in treatment which a hundred others have unsuccessfully tried. He fain looks for a lead where a successful treatment has been discovered. And, where there are a number of alternative treatments, he would be glad to see comparative experiments instituted to tell him which method is best. Nor is the doctor the only person interested. The patient, his relatives, and the whole nation would, once their thoughts were directed to the matter, feel that they had the vital interest in making the work of the medical officer as effective as possible.

If this is to be done it will, I believe, be necessary to make a fundamental change in the organisation of the Medical Service—to break away from the principle of free arbitrament in treatment for the Medical Officer, and to provide that all treatment shall be regulated by orders and instructions.

These are, as you see, very big issues. It is a question of a conflict between our cherished professional tradition that every medical man must be quite unfettered in his choice of treatment; and the very foundation principle of the Army, that every man shall work, not as he individually thinks best, but as part and parcel of a great machine.

The question as to which of these shall give way to the other must, of course, be decided by the balance of public advantage. And we cannot seriously doubt to which side that balance inclines. We have only to consider what has been achieved in this war by antityphoid inoculation, and the preventive injection of antitetanus serum; and to compare the brilliant results of these measures, carried out as they are by direct instructions from headquarters, with the results which would have been obtained if the carrying out of these measures had been committed to the individual arbitrament of medical men who had not had before the war any opportunity of convincing themselves by personal experience of the utility of either antitetanus or antityphoid inoculation.

If now, as we see is the case, considerations of public utility commend the control of treatment of the sick and wounded by orders and regulations, let me in conclusion very briefly consider with you how under such a system there might be obtained a maximum of advantage with a minimum of disadvantage. I shall, of course, indicate only in very broad outlines what would seem to me to be the requirements.

I believe there would require to be a Professional Head to the Service for the Treatment of the Sick and Wounded. He would, of course, be subordinated to the Director-General, and his duties would be to bring up the work of the medical officers everywhere to the highest standard, and to coördinate their work from hospital to hospital.

It would further, I think, be necessary to have an Advising Committee who should be charged with the duty of synopsising the clinical experience won in the war; of finding out what results the various therapeutic procedures had given; and of drawing up on the basis of these inquiries general instructions and recommendations for the treatment of different categories of cases. On a Committee of this sort one would, of course, wish to see representatives of surgery, of medicine, of the various specialities, and of pathology and bacteriological science. But one would wish to see the membership restricted to those who were actually at work at the seat of war, and who were prepared to take full responsibility, and carefully to watch the working of the recommendations, and at any moment to revise them in the light of accumulating experience, or further laboratory experiments.

Finally, one would wish to see attached to such a committee a Research Department for the resolution of all bacteriological questions arising in connexion with hygiene, surgery, and medicine. And I may perhaps be allowed, in connexion with this last, to point out that the Medical Research Committee of the National Insurance Act, under whom I have the honour to serve as Director of Bacteriological Researches, has since the outbreak of the war been placing not only large funds but a carefully selected corps of skilled workers at disposal for the prosecution of researches directly contributory to the better treatment of the wounded. It is for you to see that the results, as they are obtained, shall be taken full advantage of.

New Convalescent Home for Soldiers.—On April 23rd Mrs. Mildmay, wife of Colonel F. Mildmay, M.P., formally opened a new convalescent home for soldiers at Salcombe, Devon. The home has been given as a memorial by the parents of the late Lieutenant R. N. Vereker, of the Grenadier Guards. It stands on three acres of ground on the slope of Bolt Head, and will provide accommodation for 25 soldiers. The institution will be worked by the British Red Cross Society, Dr. H. Wilcox being the medical officer.

ABSTRACT OF

Hunterian Lecture

ON

ILEUS DUPLEX

(INFLAMMATORY ENTERO-COLIC ILEUS).

Delivered before the Royal College of Surgeons of England on March 8th, 1915,

By W. SAMPSON HANDLEY, M.S. Lond., F.R.C.S. Eng.,

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Mr. President and Gentlemen,—On the four previous occasions when the Council of this College has honoured me by election as a Hunterian Professor I have brought before you work which was the joint product of the laboratory and of the hospital ward. I believe that every surgeon who wishes to advance his subject ought throughout his career to spend a portion of his time in the laboratory, following in this respect the great example of Lister. But the segregation of pathology from practice has unfortunately tended to the exclusion of the clinician from the laboratory, and thus it comes about that he is more and more restricted to the field which Moynihan has described as the pathology of the living. On the present occasion I wish to bring before you some gleanings from that field.

Nature and Causes of Ileus Duplex.

Adynamic or paralytic ileus is a condition in which non-mechanical intestinal obstruction results from muscular paralysis of a length of the intestinal canal. Most surgeons recognise it, though some deny its existence. The best classification of its causes is given by Murphy[1]: (1) Muscular paralysis from trauma or exposure; (2) local traumatic peritonitis; (3) local or general septic peritonitis; (4) embolism of the mesenteric vessels; (5) pylephlebitis; and (6) strangulation of pedicles by mass ligatures with reflex intestinal paralysis.

Though adynamic ileus is well recognised, it nevertheless remains a kind of limbo to which obscure cases may be relegated. The subject is surrounded by that indefinable haze, the result of imperfect knowledge, which, to the despair of the student, envelops certain chapters of surgery, such, for instance, as those dealing with shock or with osteo-arthritis. It can only be clarified by patient methods similar to those which have lately been applied to the group of insects known indiscriminately to Artemus Ward as "skeeters." My attempt to-day is to pin out and dissect one variety of adynamic ileus which has characters so definite that it needs a distinctive name. For reasons which will appear I propose to call it ileus duplex. Let me remind you that the word "ileus" is a synonym for intestinal obstruction, and that it has no connexion with the word "ileum."

In order to place you at once in possession of my point of view, and to enable you to weigh the evidence later to be adduced, I shall begin by giving a brief dogmatic description of this condition.

Definition.

Ileus duplex is a condition in which, as the result of a pelvic peritonitis, there is obstruction of the intestine at two points: (*a*) in the ileum, at a point about 3 ft. above the ileo-cæcal valve; and (*b*) in the sigmoid colon at the junction of its iliac and pelvic portions. These are the points at which the ileum and colon respectively cross the brim of the true pelvis to enter the pelvic cavity. (See figure.)

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[1] J. B. Murphy, Keen's Surgery, vol. iv., 1908.

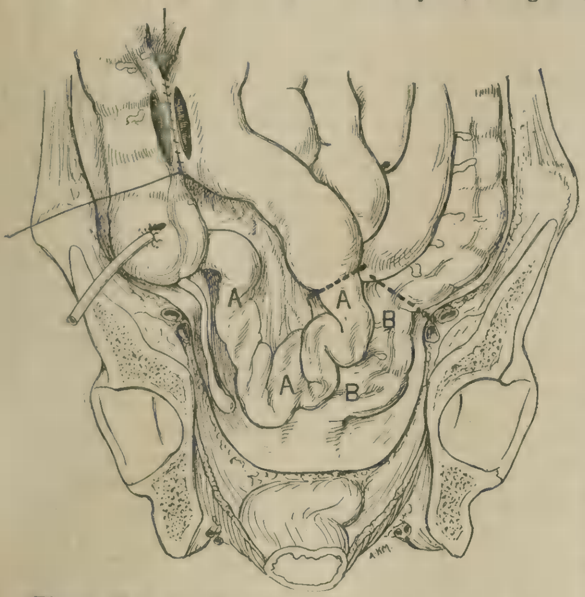

Diagram illustrating the pathology and treatment of ileus duplex. AAA, The paralysed segment of ileum. BB, The paralysed segment of the pelvic colon. The dotted lines indicate the level of the obstruction in the small and large intestine. A lateral ileo-cæcostomy is being performed between the distended ileum well above the obstruction and the cæcum. To relieve the temporary obstruction of the large intestine a catheter has been tied into the cæcum. The catheter is subsequently brought out through the abdominal wall.

The segments of intestine paralysed are two in number: first, the portion of ileum contained in the pelvis—that is to say, about the lower 3 ft., excluding the last 2 in.; and secondly, the portion of the large bowel contained in the true pelvis—i.e., the lowest portion of the pelvic colon and the upper portion of the rectum.

On account of the special liability of the pelvic peritoneum to bacterial invasion my subject is one of great importance. I deem it worthy of your attention for three main reasons: first, because the condition, though curable by appropriate treatment in the early stage, often passes unrecognised under the pseudonym of general peritonitis; secondly, because the duplex character of the obstruction, as indicated in my title, has not hitherto been appreciated; and thirdly, because, as might be expected, defects in the pathological conception of the condition have been reflected in imperfect treatment. And in this condition delayed or defective treatment means certain death.

Etiology.

Ileus duplex may result from any one of the many causes of pelvic peritonitis. Restricting myself to those causes included within the scope of my own experience, it may result from: 1. Appendicitis. 2. Ascending infection of the genital tract, gonorrhœal or septic. 3. Rupture of the bladder. 4. Carcinoma of the rectum. To these classes may be added from the experience of my gynæcological colleagues, Messrs. Berkeley and Bonney.[2] 5. Septic conditions of the pelvic genital organs or operations for their relief (pyosalpinx, carcinoma of the cervix). It seems likely that further experience will extend the list of causes which I have considered.

Appendicitis is by far the most frequent cause of ileus duplex, and for obvious reasons nearly always the appendix is pelvic in position. The special liability of pelvic appendicitis to give rise to ileus duplex joins with ambiguity of its earlier symptoms to make it perhaps the most dangerous form of the disease. I believe that its present mortality can be very appreciably lowered by a general recognition of the danger.

MORBID ANATOMY OF ILEUS DUPLEX AS OBSERVED DURING LIFE.

It frequently happens in cases of pelvic peritonitis that pus is found in the pelvis lying free among practically normal coils of ileum, which though congested have not lost their lustre. The bowel may contain gas, its wall is not œdematous, it has evidently not lost its motor power. The peritonitis remains superficial, and the wall of the gut does not become inflamed. Drainage of the pelvis, and the subsequent use of turpentine enemata, suffice for the successful treatment of such cases, which form a large majority of cases of pelvic peritonitis.

In other cases, and these alone interest us to-day, the coils of the pelvic ileum, bathed in pus, show evidence of acute inflammation of the bowel wall. Their peritoneal surface is dull, intensely congested, and covered with pus and flakes of lymph. The bowel wall itself is swollen and œdematous. The affected coils are empty, passively contracted and motionless, and between adjacent coils are sharp angular kinks sometimes fixed by flakes of sticky lymph. My colleague Victor Bonney, who gave what is perhaps the earliest detailed description of the condition of the ileum in these cases,[3] noted that the bowel is flattened like a strap, and he found that it is impossible by manipulation to force the gas from the intestine above into the inflamed segment of ileum, an important observation directly showing the impermeability of the inflamed bowel.

The conditions described, which involve the lower two or three feet of the ileum, immersed in the pelvic basin of pus, extend to within about two inches of the ileo-cæcal valve. The terminal two inches of the small intestine extending from the brim of the pelvis to the ileo-cæcal valve is usually collapsed and normal.

This condition of the pelvic ileum may, no doubt, coexist with a hopeless general peritonitis involving the whole area of the peritoneum. But in the cases we are considering the suprapelvic abdomen, though often not shut off by any lymph barrier, affords no sufficient evidence of peritonitis except to one obsessed by a preconceived idea. The pelvic ileum only is inflamed. Higher up the ileum presents its normal shiny appearance or is at most slightly congested. No pus is present amid its coils. A fairly sharp boundary line separates it from the inflamed pelvic ileum. If the case is an early one distension is absent. Soon, however, the suprapelvic ileum begins to be distended, owing to the block produced by paralysis of the pelvic ileum. It fills from below upwards, for I recollect one case in which the jejunum was still empty while the ileum was distended. But in what may be regarded as the typical stage of ileus duplex the suprapelvic small bowel, though quite uninflamed, is greatly distended owing to the obstruction lower down. That in this stage it is not paralysed is shown by the results of treatment.

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[2] Victor Bonney: On Post-operative Paralytic Obstruction of the Intestine, with Special Reference to its Treatment by Jejunostomy, Archives of the Middlesex Hospital, vol. xxi., p. 39.

[3] Loc. cit.

It must be clearly recognised that distension of the suprapelvic small bowel even when accompanied by slight congestion is not adequate evidence of general peritonitis. If, however, the case is allowed to run its course paralysis of the distended intestine supervenes, bacterial penetration of its walls occurs, and a general peritonitis may be found at the necropsy.

We must now turn to the condition of the large intestine. Usually at the time the operation is performed the large intestine shows no evidence of inflammation, perhaps because it is situated further from the inflamed appendix, and shielded from early infection by the ileal coils. Clinical evidence, however, shows conclusively that in the course of a few days the pelvic colon, though its involvement is later and less constant than that of the pelvic ileum, shares in the inflammation and paralysis which have already overtaken the small bowel. To this point I shall later return, for its recognition is essential to success in treatment.

The portion of the large bowel, situated between the ileal obstruction and the obstruction in the pelvic colon, usually contains some flatus and is neither collapsed nor distended.

PATHOLOGICAL ANATOMY.

In many cases after death the necropsy fails to reveal the real secret of the condition. What is found is a general peritonitis with general paralytic distension of the intestinal tract, a misleading confirmation of the usual diagnosis made during life. At the time it was made this diagnosis was nevertheless incorrect. No series of necropsies can establish the morbid anatomy of ileus duplex. In it two processes—namely, a spreading peritonitis of pelvic origin and an intestinal obstruction—are running a race. In the early stages seen by the surgeon the obstruction is well ahead, and there is no peritonitis above the pelvic brim. In the post-mortem room stage the peritonitis has had time to overtake it, and may be more or less generalised. Moreover, since obstruction ends in peritonitis and peritonitis in obstruction, it may pass the wit of man to say after death which was the primary and which the secondary cause of death. The recognition of ileus duplex is a product of operating-theatre pathology, not of dead-house pathology, and supplies one more example of the truth of Moynihan's belief that intra-vitam rather than post-mortem inspections are at the present day the key to further advances in knowledge.

CLINICAL SIGNS AND SYMPTOMS.

The signs and symptoms of ileus duplex are those of acute intestinal obstruction, superposed on those of the pelvic inflammation which has caused it. A detailed description is perhaps superfluous, but a few special points need emphasis. Vomiting, though not invariably an early symptom, is almost a constant one. An initial vomit is the rule in appendicitis, but continued vomiting is very exceptional. It is a most useful danger-signal. When repeated vomiting occurs the possibility of ileus duplex must be promptly considered, and careful instructions must be given to the nurse to watch for and record the passage of flatus. The cessation of flatus, in spite of enema and the use of the rectal tube, establishes the diagnosis of intestinal obstruction, and if the subcutaneous injection of eserine fails recourse must be had to operation. Owing to the late and slow onset of the large intestine paralysis enemata may at first succeed in relieving the paretic colon. If subsequently vomiting and other symptoms persist this delusive success must be ignored, or surgical intervention will come too late.

In typical cases there is moderate general distension of the abdomen, but owing to the acute onset of the obstruction no opportunity occurs for those intestinal gymnastics which produce visible coiling in obstructions of slower development. Visible peristalsis is absent. Abdominal rigidity is also absent, except possibly in the hypogastric region. This absence of rigidity is a salient and important point in ileus duplex.

Abdominal rigidity depends upon inflammation of the parietal peritoneum of the anterior abdominal wall, and in operable cases of ileus duplex this district of the peritoneum is not inflamed except at its hypogastric margin. Care must be taken not to mistake for true rigidity that tension of the abdominal wall which results from the intestinal inflation. Abdominal respiration is embarrassed by the general distension, but is still present.

In untreated cases the later signs merge completely into those of general peritonitis.

PROOF OF THE DUPLEX CHARACTER OF THE OBSTRUCTION.

Let me now attempt to justify the dogmatic statements I have made.

Inflammatory obstruction of the lower ileum is a well-recognised condition, and this lecture will fail in its principal object if I fail to prove that in most cases of the kind there is also an obstruction in the pelvic colon. To this point I must now direct your attention.

Failure of Treatment if Directed Solely to the Ileal Obstruction.

In cases of obstruction of the lower ileum I have found by experience that a lateral anastomosis between the ileum some little way above the point of obstruction and the cæcum or ascending colon is, on the whole, a very successful method of treatment except in ileus of inflammatory origin. The table which follows indicates my experience up to about 1908.

TABLE I.—*Cases of Acute Obstruction of the Lower Ileum treated by Ileo-cæcal Lateral Anastomosis.*

	Number of cases.	Deaths.	Recoveries.
Obstruction by the appendix acting as a band (appendix also removed)	5	0	5
Obstruction by bands	3	1	2
Inflammatory ileus secondary to pelvic inflammation ...	5	4	1

This table shows an extraordinary difference in the prognosis of obstruction of the lower ileum according as the obstruction is inflammatory or non-inflammatory. The contrast is even more striking than the table would indicate, for the fatal case of "obstruction by band" recovered from the operation, only to die from phthisis.

The extraordinary difference in the prognosis of non-inflammatory and inflammatory cases might be explained by assuming that death in the inflammatory cases is due to general peritonitis and not to obstruction. But, as we shall see, clinical observation does not bear out this view.

The contrast between my successful results in cases of obstruction by band and my mortifying record of failure in inflammatory ileus puzzled and depressed me. It seemed clear that in inflammatory ileus an unrecognised factor was at work, but I was unable to identify it, and the text-books did not assist me. The first ray of light on the problem came in 1910 from the following case which I shall ask you to allow me to consider in full.

Pelvic appendicitis; ileus duplex; ileo-sigmoidostomy; recurrence of symptoms of obstruction; cæcostomy; recovery (*Case 8*).—At the request of Dr. W. M. G. Glanville, of Hampstead, I saw with him in 1910 an old lady of about 70, suffering with acute abdominal pain rather more severe on the right side than on the left, but not definitely localised in the right iliac fossa. Chronic constipation had been a marked trouble. The temperature was slightly raised and the pulse somewhat quickened. These symptoms had been present for about 24 hours. There was no abdominal rigidity, nor could any tumour be felt in the right iliac fossa. There was in this region some tenderness on deep pressure. No tenderness was elicited on vaginal or rectal examination. On opening the abdomen in the middle line, within 24 hours of the onset of symptoms, I found a gangrenous appendix hanging down into the pelvis. It proved to be impossible to remove it without making a second incision in the right iliac fossa. The coils of the pelvic ileum were intensely congested, but there was no pus present, nor did there seem to be any indication that the congested ileum was paralysed.

During the succeeding 48 hours, although the patient's pulse and general condition were fairly good, no flatus was passed, and the abdomen became much distended. It was obvious that there was complete inflammatory obstruction of the lower ileum, and that the patient would die unless something further was done. The median wound was opened up, and a lateral ileo-sigmoidostomy was performed as quickly as possible. Dr. D. Embleton, pathologist to the University College Hospital, was asked to examine the pus, and on his advice a large dose of antistreptococcic serum and a stock vaccine of staphylococcus aureus were administered shortly after the operation. Sixteen hours later no flatus had passed, and the patient's condition was extremely grave, indeed apparently hopeless. The pulse had become very rapid and feeble, and abdominal distension had increased. Small doses of calomel by the mouth caused sickness, and turpentine enemas were ineffectual. Dr. Glanville urged that strong purgatives should be administered, and to this course I consented because I thought the case was hopeless. He carefully passed a stomach-tube, but it was repeatedly returned. Another anæsthetic was therefore given 60 hours after the first operation, so that the stomach could be washed out and placed in a condition to retain purgatives. Dr. Glanville then administered through the stomach-tube 5 grains of calomel, an ounce of magnesium sulphate, and a minim of croton oil. These heroic measures were followed the next morning by a copious evacuation and the patient's condition then began to improve, although there was suppuration of the incisions owing to the virulence of the bacteria. An autogenous vaccine was prepared by Dr. Embleton and administered, apparently with good results. A week later, however, abdominal distension recurred and became extreme, although flatus in small quantities continued to be passed. Partial obstruction evidently persisted, and paresis of the sigmoid below the ileo-sigmoidostomy was apparently the cause of it. I therefore opened the cæcum through the wound without an anæsthetic and tied in a catheter. The relief was immediate. From this time the patient slowly recovered strength, and she is now in excellent health, has been able to take a long railway journey, and is free from the chronic constipation which had troubled her for years before the operation. The cæcostomy closed spontaneously.

I have never seen a case recover in which death appeared so imminent and certain. The main part of the credit belongs to Dr. Glanville, who refused to despair when I had given up hope, though I may congratulate myself that my ileo-sigmoidostomy was able to stand the strain imposed upon it by his heroic and almost veterinary cathartics.

Evidence afforded by Two Crucial Cases.

The successful result of this case clearly indicated to me the reason of my previous failures. In my early cases I had been dealing with one obstruction and had ignored a second. My tentative and halting treatment of this case is obviously open to criticism in the light of my present knowledge. But it has this great value, that it affords an experimental dissection of ileus duplex into its three pathological elements of pelvic peritonitis, ileal obstruction, and colic obstruction. It is a crucial instance. In the first operation the peritonitis and its cause were treated. In spite of this the morbid picture continued to develop, and obstruction became manifest. The second operation short-circuited the small intestine obstruction. Its success was temporary only, and the purgatives which followed it produced but a transient result. The third operation, aimed at an assumed obstruction in the colon, gave immediate and permanent relief. In the first two stages the conditions present within the abdomen were determined by direct inspection.

The history of this case has a demonstrative value rare in clinical work, and only attained as a rule in precise and carefully planned laboratory experiments. Let me remark especially that it clearly indicates three stages of the obstruction in ileus duplex: (*a*) Stage of obstruction of the ileum alone; (*b*) stage of obstruction of the ileum with paresis of the colon; and (*c*) stage of complete obstruction of both ileum and colon. The late onset of the colic obstruction is an important point to which I must return.

But it is frequently said that one case proves nothing. Let me then draw your attention more briefly to a second and later case.

This case, too, was one of pelvic appendicitis in a woman of middle age, in which, though the pelvic ileum was inflamed and congested, no evidence of intestinal obstruction had manifested itself prior to the first operation. I accordingly contented myself with the removal of a gangrenous appendix and the drainage of a pelvic collection of pus. On the fifth day after the operation complete intestinal obstruction developed. The abdomen was reopened, a lateral ileo-colostomy was performed, and, in view of the lessons of the previous case, a catheter was tied into the cæcum. After a severe struggle the patient recovered.

So far this case has less probative value than the preceding one. The colic obstruction was not obvious at the operation, and a critic might assert that it would have been sufficient to short-circuit the inflamed ileum without providing any relief by the cæcostomy for a purely hypothetical colic obstruction lower down.

A very instructive incidence of this patient's convalescence effectually disposes of the criticism. Shortly after the spontaneous closure of the cæcostomy opening the abdominal distension recurred. It could not be overcome by purgatives or enemata, but after reaching a serious degree it was relieved by the spontaneous bursting open of the recently healed cæcal fistula.

It is impossible to inflict upon you detailed accounts of all my cases. Anticipating what I have to say on treatment, let me then point out Table II., which shows that, if treatment is directed only to one of the two obstructions present, death may be expected in 75 per cent. of cases. But if my hypothesis of a double obstruction is acted upon the mortality falls to 20 per cent. The evidence for the duplex character of the obstruction derived from the two crucial cases I have given you in detail is thus borne out by the appeal to statistical results. The fact that no two blades of grass are precisely alike, still less two cases of disease, is the fallacy of all statistics, which relegates them to the place of secondary or confirmatory evidence. The precise study of single cases is, in my opinion, of much greater value. But when, as in this instance, the one method of investigation confirms the other a high degree of certainty is reached.

PREVENTION OF ILEUS DUPLEX.

Although, thanks to a general recognition of the need for prompt operation in appendicitis, the mortality of that disease is now becoming a residual one it is susceptible of further reduction if the danger of ileus duplex is borne in mind in cases where the appendix is pelvic in position. It is of great importance to detect and treat infection of the pelvis in its earlier stages.

In every case of appendicitis, unless it is certain that the mischief is securely shut off by adhesions and confined to the right iliac region, a small median subumbilical incision should form the first step of the operation. With a pair of sponge forceps a fold of gauze is carried to the bottom of the recto-vesical or recto-uterine pouch. If no inflammatory fluid is present on the gauze when withdrawn the finger with great caution explores the limits of the inflammatory mass in the right iliac region, thus gaining valuable information. The incision is then sewn up, and the appendix subsequently removed through an incision made over it in the usual way.

If the rule thus laid down be carried out, in a certain proportion of cases, even of localised appendix abscess, unsuspected dirty or semi-purulent fluid will be found free in the pelvis. By the introduction of a drainage-tube through the median exploratory incision to the bottom of the recto-vesical pouch these cases will be saved from the pelvic abscess, or spreading peritonitis, or ileus duplex which they would probably have developed if the median incision had not been made.

When pelvic infection is found it is a matter to be decided in each case whether to prolong the incision and remove the appendix through it, or to make a subsequent second incision directly over the offending organ.

Two other points must be borne in mind for the prevention of mortality from ileus duplex. At every operation for pelvic appendicitis the ileum must be examined for inflammatory paresis and the suprapelvic ileum for distension. After every appendix operation the nurse must be instructed to report carefully on the passage of flatus, for early recognition of ileus duplex is essential to its successful treatment.

TREATMENT.

The treatment of ileus duplex may be conveniently studied in the light of Table II., which records the results of my experience during a period of eight years. The condition is neither rare nor common. I have met with it 14 times among some hundreds of abdominal cases of all kinds. Though the figures of my table are small, they are, I think, very significant as to the merits of different modes of treatment. They show especially that forms of treatment which take into account only the small intestine element in the obstruction give a high mortality. Thus 4 out of 6 cases of simple ileo-cæcostomy died. The two cases which recovered indicate that the large intestine obstruction, besides being later in onset, may not always become complete.

TABLE II.—*Results of Treatment in the Lecturer's Cases of Ileus Duplex, 1907-1915.*

	Recovered.	Died.
Enterostomy	0	1
Enterostomy with ileo-cæcostomy ...	1	0
Ileo-cæcostomy alone	2	4
Ileo-sigmoidostomy	0	1
Colostomy alone...	0	1
Ileo-colostomy with cæcostomy* ...	3	0

* In one of these cases the cæcostomy was performed some days after the ileo-colostomy on account of the persistence of symptoms, and with immediate relief.

On the other hand, I have no death to record among the 3 cases treated by ileo-colostomy combined with cæcostomy. This is the ideal treatment. It appears to matter little whether the anastomosis is made between the ileum and cæcum or the ileum and sigmoid, provided in either case that a safety valve to the exterior is supplied by tying a catheter in the large intestine. I believe the anastomosis with the cæcum is safer as being further removed from the inflamed area.

On a recent occasion, forgetful of the results of my own experience, I performed an ileo-sigmoidostomy for ileus duplex without draining the cæcum. The case was one of pelvic appendicitis in a woman of advanced years, with mingled signs of pelvic peritonitis and obstruction. The pelvic ileum was obviously paralysed, but at the time of operation the pelvic colon wore a deceptively normal appearance. Lateral anastomosis of the suprapelvic ileum with the sigmoid was followed by some days of complete relief. But the anastomosis, subject to the strain of oncoming paresis of the pelvic colon, finally yielded, and the patient died from septic peritonitis and fæcal extravasation. So difficult is it not to forget the lessons of one's own experience.

In at least one of my cases treated by ileo-cæcostomy and cæcostomy natural actions of the bowels per anum occurred within a day or two of the operation. This must not be taken to prove that the drainage of the cæcum was unnecessary. It has already been shown that the colic element of the double obstruction is late in its onset, and it must be obvious, moreover, that drainage of the cæcum will relieve distension of the large intestine, and will thus facilitate its blood-supply and tend to *prevent* paralysis of the pelvic colon.

I am prepared to admit that a cæcostomy is superfluous in a minority of cases. The recovery of two of my cases of ileo-cæcostomy, cases in which the cæcum was not drained, shows that the third stage, that of paralysis of the pelvic colon, does not constantly follow the others if the peritonitis is treated by pelvic drainage. But it cannot be right to trust to this in any particular case. My figures indicate that the surgeon who trusts to ileo-cæcostomy and peritoneal drainage alone will repent his decision in at least two out of three cases. If obstruction persists he may still be able to save the patient by a timely cæcostomy, as one of my cases shows, but the undesirability of secondary operations in acutely ill patients is so generally recognised as to need no emphasis. It is far better to perform simultaneous cæcostomy as a routine precaution in all cases where an ileo-cæcostomy is necessary.

The Colostomy Opening.

In dealing with the large intestine element of the obstruction it is to be borne in mind that the obstruction is temporary only, and that in cases which recover within ten days or a fortnight at most the large bowel will have recovered its propulsive power. If during this period provision is made for the escape of gas it appears to be unnecessary to provide for any evacuation of solids, especially as the patient will be taking only small amounts of food. For these reasons it is unnecessary to make a full-sized colostomy opening, and all needs will be met if a large rubber catheter is passed through an aperture in the wall of the colon and held in place by a purse-string suture, which also transfixes the catheter. It probably matters little whether the catheter is introduced into the cæcum or at any lower point situated above the pelvic colon. As a matter of convenience, when an ileo-cæcostomy has been performed the cæcum is the most accessible point to choose. Probably the best form of catheter is a so-called "self-retaining female catheter," since this is less likely to be blocked by fæcal débris. Should the cathether become blocked it must be cleared by syringing through it a small amount of saline. The catheter will come out spontaneously about the fifth day, and a small fæcal fistula remains which will rapidly close as soon as it has become superfluous.

Enterostomy.

The old treatment of enterostomy will, no doubt, occasionally save a case of ileus duplex. The method is, however, a crude and almost barbarous expedient. It is true that it removes the obstruction completely, but in order to do so it robs the patient of much of the nourishment elaborated in the upper intestine and of most of the fluid taken by the mouth. This latter loss is the more important one. The effects of an enterostomy upon the patient's general condition may be compared to the effects of persistent vomiting. Even in cases where collapse and starvation are averted the miseries the patient has to endure from the escape of the intestinal juices upon the skin are so great that the operation should, I think, never be performed except as a last resort. The evils of enterostomy may be diminished considerably if there is a free passage into the large intestine below it, and in one of my cases which recovered I performed an ileo-cæcostomy combined with an enterostomy, but though this patient recovered his sufferings from dermatitis of the abdominal wall made me resolve to abandon the operation even when combined with an ileo-cæcostomy.

ILEUS DUPLEX FREQUENTLY MISTAKEN FOR GENERAL PERITONITIS.

In cases of pelvic suppuration when signs of intestinal paresis show themselves it is easy to jump to the conclusion that the paresis is due to the onset of a general peritonitis and that useful interference is limited to drainage of the peritoneal cavity. In the post-operative group of cases, as a rule drainage has already been provided, and a diagnosis of general peritonitis means the abandonment of any further effort to save the patient.

It is a remarkable fact that in the current edition of his work on "Intestinal Obstruction," which has been the guide of more than one generation of surgeons, Sir Frederick Treves has recanted his belief in the existence of ileus paralyticus. He says:

> The sole pathology of ileus paralyticus is summed up in the assumption that a portion of the bowel has become incapable of peristaltic movements, and as a result of this acute symptoms follow. I venture to think that ileus paralyticus, as described in the text-books and in the previous edition of this book, has no clinical existence.
>
> How often it is that the symptoms persist and rapid death follows the liberation of a coil of intestine strangulated by a band. Such death, however, is due to peritoneal infection or septicæmia, and not to ileus paralyticus. Those, however, who still claim that ileus paralyticus exists would maintain that the persistence of the symptoms and the final dissolution of the patient are due to the fact that the damaged coil of intestine remains paralysed.
>
> I have never met with an example of such a case as this in which a diffuse peritonitis was not met with after death.

Note that the basis for Sir Frederick Treves's disbelief in paralytic ileus is to be found in the last sentence I have quoted. He assumes that the general peritonitis found, as he truly says, in all cases at the necropsy is the sole and sufficient cause of death, and that cases of so-called "paralytic ileus" are really cases of general peritonitis. This false assumption, based on post-mortem pathology, is negatived by a study of the order of events in the living abdomen. As I have shown, observations in the operating theatre show marked evidence of obstruction before the appearance of any signs of general peritonitis. The general peritonitis found after death is a late result of the obstruction. This conclusion is amply borne out by the successful results of treatment directed towards the short-circuiting of the segment or segments of bowel which are presumed to be paralysed. On Sir Frederick Treves's hypothesis such treatment would be absolutely useless.

The evidence on this point derived from my cases of ileus duplex is fortified by a consideration of the results of short-circuiting operations in cases of obstruction by band. It has been my practice in such cases, wherever there was definite evidence of strangulation, and after the band had been divided, to short-circuit the affected loop by a lateral anastomosis. In cases thus treated I have found that recovery is the almost invariable rule.

The question is not merely one of academic interest. To label a case of ileus duplex as general peritonitis is to make a prophecy, not a diagnosis. In the course of a few days that prophecy will deplorably fulfil itself at the cost of the patient's life. I submit that upon the question at issue the views of Sir Frederick Treves may be rightly described as reactionary and dangerous in proportion to the distinction and authority of their author.

DIAGNOSIS OF ILEUS DUPLEX FROM GENERAL PERITONITIS.

Some of the ordinary criteria which distinguish general peritonitis from intestinal obstruction fail in the cases of ileus duplex, since, in addition to the obstruction, pelvic peritonitis is also present. Thus general peritonitis and ileus duplex present a close general resemblance. In both conditions there are general distension, vomiting, complete constipation, raised temperature and rapid pulse, with abdominal pain and distress and embarrassed abdominal respiration.

The points of difference between the two conditions, though few in number, are happily sufficient to distinguish them. In general peritonitis general rigidity of the anterior abdominal wall is the rule. In ileus duplex rigidity is absent or is present only in the hypogastric region. Moreover, the diffuse abdominal tenderness of the whole abdomen which characterises general peritonitis is not found in ileus duplex, nor does the pulse, however rapid, present the wavering quality of the peritonitic pulse.

When I speak of these differences you will understand that I refer to the earlier stages. Ileus duplex is no exception to the rule that intestinal obstruction ends in general peritonitis.

CONCLUSIONS.

Let me now attempt to sum up my conclusions. Peritonitis of the serous surface of the intestine, when it reaches a certain degree, is accompanied by complete paralysis of the involved segment of intestine. General peritonitis means general paralysis of the intestine, and is accordingly not amenable to surgical treatment. But if the peritonitis is partial, though unlimited by any adhesion barrier, certain segments only of the intestine are paralysed. If the paralysed segments can be thrown out of circuit by surgical measures recovery is in such cases possible and even likely. Unfortunately, in these cases the surgeon's hand has been paralysed by a facile assumption, based upon the general abdominal distension, that general peritonitis is present.

The position of the subject in 1903 is thus summed up by Douglas[3]:—

> Post-operative sepsis resulting in peritonitis produces paresis of the muscular wall of the intestine, and the resulting intestinal obstruction is the conspicuous symptom of the general peritonitis. In septic peritonitis, with conspicuous symptoms of obstruction, experience has taught us that secondary operations are so uniformly fatal that surgeons are discouraged in undertaking them. …… Enterostomy has been frequently done without avail.

This pessimistic view was held by Douglas, though he recognised that the paralysis might involve only small segments of bowel, because he wrongly assumed the presence of general peritonitis in such cases.

The observations I have made in the operating theatre and the successful results of my cases show conclusively that septic ileus of pelvic origin is not accompanied by general peritonitis when it first comes under observation, and that it is perfectly amenable to surgical treatment, subject to a clear recognition of the fact that two segments of the bowel are involved, and that accordingly two obstructions require to be circumvented.

You may complain that the name ileus duplex adds a new terror to medical nomenclature. It is the acknowledged privilege of the poet to give to airy nothing a local habitation and a name. I fail to see why the humble scientific observer, whose trammelled imagination must dance in tune with the facts of nature, may not assert at times the same right of fixing in language his comparatively dull realities. And in the present instance the name ileus duplex, whatever its defects, will, I believe, give such definition and precision to the condition I have described as to hasten its general recognition, and thus to save lives which might have been sacrificed.

[This lecture will appear in full, with case notes and illustrations, in an early number of the *British Journal of Surgery*.]

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[3] Douglas's Surgical Diseases of the Abdomen, p. 181.

LITERARY INTELLIGENCE.—In view of the new issue of the British Pharmacopœia Messrs. Cassell and Co., Limited, will very shortly publish a new edition of "Materia Medica and Therapeutics," by Dr. J. Mitchell Bruce, assisted by Dr. W. J. Dilling, rearranged and rewritten to correspond thereto.

RADIOSCOPY WITH THE 3RD FRENCH ARMY.

BY LIEUTENANT-COLONEL A. W. MAYO-ROBSON, R.A.M.C., C.V.O., F.R.C.S. ENG.

With a Note by DR. HARET *and* DR. SCHLESINGER.

DURING a recent visit to France (kindly permitted by the Director-General of the Army Medical Department and at the request of the French Embassy) for the purpose of installing the Urgency Cases Hospital for the French wounded, I had the opportunity of seeing Dr. Haret, the radiologist to the 3rd Army, at work in one of the hospitals near the front. I think it may interest the readers of THE LANCET to know how excellent are the arrangements for carrying out radioscopy in the scattered hospitals near the front where it would be impracticable to instal a permanent apparatus.

A large covered motor ambulance carries, not only the operator and his assistant, but also a dynamo, which can be worked by the engine of the motor, and a transformer that can be used in those hospitals where there is an electric supply. It also carries a folding couch, stretchers, and all the apparatus necessary for radioscopy. This ambulance mobile regularly visits in turn the hospitals over a wide area, but if required for any special case it is available on giving short notice.

Dr. Haret told me that he had made as many as 50 radioscopic examinations with localisations in one morning and with each case is furnished a chart and drawing. It was most interesting to witness the celerity and skill with which the drawings were effected. In our hospitals in England radiography is more generally employed, and where a fixed apparatus is available and the necessary photographic chamber installed it presents many advantages over radioscopy, but in the crowded hospitals close to the battle line where 50 to 100 badly wounded cases may be brought in any morning, nothing but the most expeditious methods can be made use of, and here I have no hesitation in giving the preference to radioscopy.

In the Urgency Cases Hospital attached to the 3rd French Army we have an excellent X ray outfit, which was supplied by Messrs. Watson and Sons, of Great Portland-street, London, W., under the kind supervision of Sir James Mackenzie Davidson, and Mr. J. G. Everitt, our skilful radiographer, carries out the work with great celerity and accuracy. For instance, in the case of a recent shell wound of the shoulder with enormous swelling, I saw the X ray examination made and localisation of a large fragment of shrapnel casing effected by the method suggested by Sir James Mackenzie Davidson, and then a radiograph was made within a quarter of an hour, and half an hour later the fragment was removed by Mr. J. Cairns Forsyth, F.R.C.S., the "médecin-chef" of the hospital.

In the greater number of our cases we give the preference to radiography, but in simple cases radioscopy alone is employed.

Appended is an extract from a paper given to me by Dr. Haret which demonstrates his methods.

A Simple Method for the Localisation of Projectiles by Radioscopy, by DR. HARET *and* DR. SCHLESINGER.[1]

Localisation of projectiles becomes of more practical value as the means and methods are more accurately constructed, but all the technique has the defect of requiring radiographic reproductions, and of being too complicated. Much of the apparatus employed by civil radiologists in their consulting-rooms, where various instruments requiring delicate and long manipulation can be provided, is not practicable within the zone of a fighting army. For the last three months we have been working with a Gaiffe transport cart for radiology, midway between the front and the base—that is to say, in a district that has been largely devastated, and where we are reduced to find our own material and to use only such as presents no necessity for frequent repair. We have to work quickly and surely to give information to the surgeons, who have an enormous task before them and very little time to lose in fruitless investigations. The simplest means to fit to the circumstances are required, and we have consequently adopted for the localisation of projectiles a method which, while its construction can be managed with the means at our disposal, gives the surgeon accurate information by a simple consultation of the screen. The method is based on the principle of triangulation and has been adapted to radiology.

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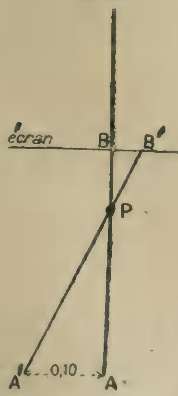
[1] Inspector-General Mignon has authorised the publication of this note.

We left Paris with a radiographic and radioscopic plant, but with the belief that the latter would prove the more valuable, a view that was quickly confirmed. At the front the localisation of projectiles by a plan on the screen direct, and a sketch, is the method of choice, and we have had the gratification of meeting with the approval of eminent surgeons who previously had given their preference to radiography. But to be useful and satisfactory radioscopy must be done in a special way. The sufferer reclines with the bulb below and the screen above—this is the best method of examination. In this way we are prepared for all eventualities in the region to be examined, whatever the state of the wounded, without having to modify the disposition of our apparatus and without loss of time. The bulb, furnished with a protective top and iris diaphragm, has a slide fixed on the edge of the table which permits every movement in the same horizontal plane. The screen, supported by another slide fixed on the opposite edge of the table, will move at the will of the radiologist above the patient. The patient can remain on the stretcher which is placed on the table, all useless and painful movement being thus avoided. We then make a radioscope of him from head to foot, stopping at the injured spots to construct a diagram on the screen, which replaces with advantage the perishable radiograph which takes so long to obtain. For we seek no fine details of bony structure, but only fractures, bullets, and pieces of shrapnel or shell, all of which things are perfectly visible on the screen wherever situated, when this is placed in the right position and the Chabaud bulb is properly manipulated. In order to be able to make every movement we arrange the radioscope by fixing the bulb on its support at a given distance from the surface of the table. We measure the distance of the focal point of the anticathode from the upper surface of this table—call it x cm. If now we place the horizontal screen in contact with the top of the table we shall mark on the screen that distance x in centimetres, and we shall adjust that scale, so that when the screen is fixed for an examination we read directly the distance AB exact from the focal point of the anticathode to the screen. This done, the use of a small "cleat" allows us in the darkness to displace by 10 cm. the bulb on the slide in the direction of the length of the table.

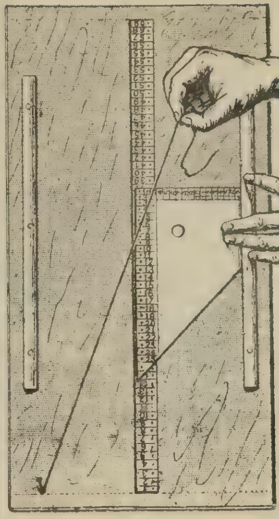
FIG. 1.



To localise the depth of a projectile during radioscopy, the screen is placed in contact with the skin over the part affected; the normal ray is made to pass by the projectile, and a shadow is obtained on the screen which is marked with a soft (*gras*) crayon as point B. (Fig. 1.) Then the bulb is moved the length of the slide for the distance A–A′, which we have fixed as 10 cm., and the projectile gives us a second image B′, which we also mark. We can measure the distance B–B′ of the two images of the projectile on the screen. The focal point of the anticathode in its two displacements and the two images of the projectile are in the same plane as the projectile.

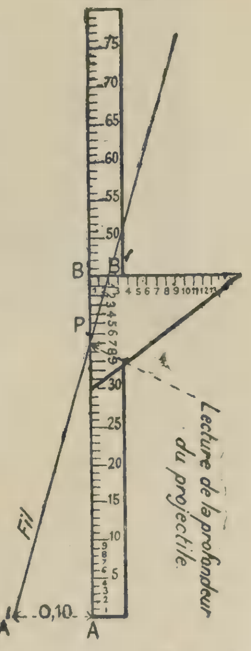
It is sufficient, then, for recognising the depth of the foreign body, to construct in the space the two triangles BPB′ and A′PA, which have two sides BP and PA in a straight line. The sides BB′ and AA′ are perpendicular to the straight line AB, and we know by simply reading them off the distances BB′ and AA′; if we join by a thread the points A′B′ we obtain on the line BA a point P at the apex of the two triangles, which is the exact point at which the projectile is situated; the distance BP, which can easily be read off, is the distance of the projectile from the skin.

FIG. 2.



For practical purposes we have devised the following plan. On a flat board (in this case the cover of the coil) is glued a dressmaker's metric tape measure of which one edge, the left, for example (Figs. 2 and 3), represents the line AB, and at A′ we fix a fine thread. We then take a set-square whose two sides containing the right angle are graduated in centimetres. To locate the situation of the projectile will then be very simple. For a thickness AB, we place the apex of the right angle of the square at the point B on the edge of the tape, corresponding to the number of centimetres indicated by the support of the screen. On the side BB′ of the square we note the figure found for the variation of the shadow of the projectile. If with the thread we then join A′B′ the thread cuts the line AB at a point P such that PB is the distance of the projectile from the skin.

FIG. 3.



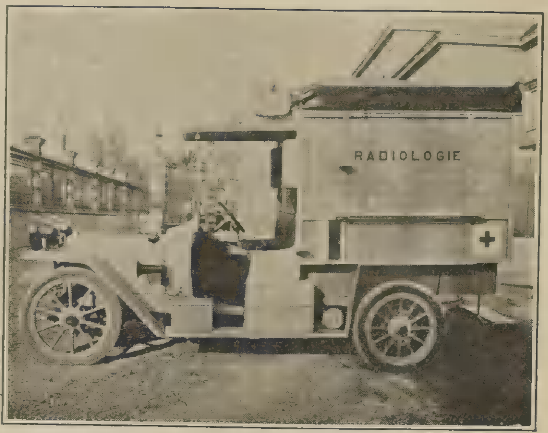
When for any reason we cannot apply the screen directly to the skin we perform the same operations by noting the difference of level between the place where the screen is applied and that whence the normal ray leaves the skin; we shall only have to diminish this distance on the figure found.

To sum up. The depth is determined by the following operations:—

1. Contact of the screen with the skin at the affected point.
2. Marking on the screen of the normal ray passing by the projectile.
3. Displacement of the bulb (10cm.) along the slide.
4. Marking of the new shadow of the projectile on the screen.
5. Measuring the distance between these two marks.
6. Reading off on the stem of the screen of the anticathode-screen distance.
7. Placing the apex of the right angle of the set-square at the figure corresponding to this distance on the tape-measure.
8. Stretching the thread from A to the figure of the edge BB′ of the square corresponding to the difference in centimetres of the two marks of the image.
9. Reading off on the vertical edge of the square of the figure at which the thread cuts this line; this gives the depth of the projectile from the skin.

This little device seems to us so simple that we make it known to those of our *confrères* who are deprived, as we are, of the fragile apparatus for localisation, but who can always find available a dressmaker's tape-measure, a piece of card to make a set-square from, and some thread.

FIG. 4.



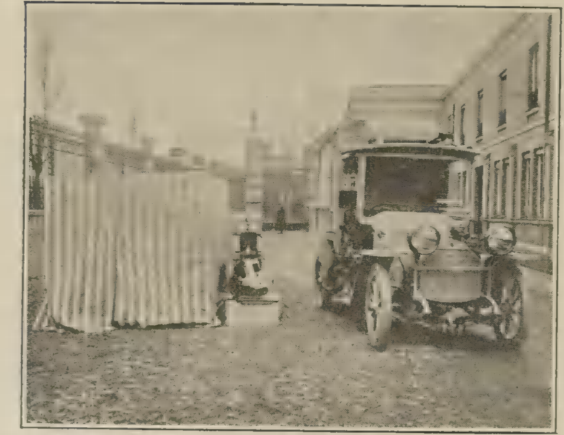
The "Radiologic Automobile."

Since the outbreak of war various designs have been brought out to meet the requirements of radiographers who are working in the field and clearing hospitals, but none seems more completely thought out than the "radiologic automobile," particulars of which have been kindly furnished me by the distinguished Présidente of the Croix Rouge Française.

Briefly, the outfit consists of a powerful modern motor chassis, upon which is mounted a van body divided into two compartments, the inner of which is a completely equipped photographic dark-room for developing X ray plates, the remainder of the car being most ingeniously fitted to carry the whole of the appliances and stores required. (Fig. 4.) Driven from the motor is a dynamo, which generates electricity, not only for lighting the interior and exterior of the car, but also for the X ray work itself. Included in the equipment carried on the car is a dark tent in which the actual examinations take place, and the necessary table on which the patient is placed, and, in fact, no detail seems to have been forgotten. (Figs. 5 and 6.)

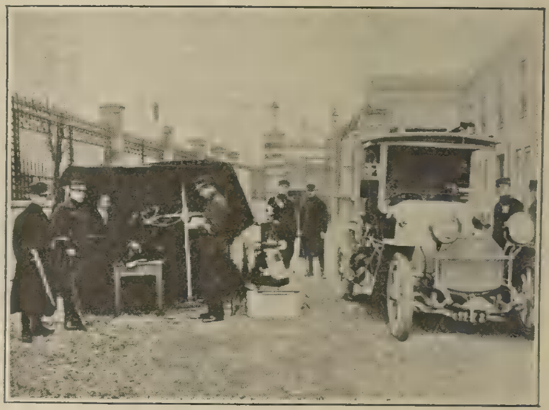
By means of one of these cars radioscopy or radiography can be performed anywhere, and as one outfit will serve a considerable number of hospitals great economy both in personnel and in money is effected. The cost of each complete installation is £850, and the Society of the Croix Rouge Française, 9, Knightsbridge, London, S.W., is anxious to name each car after a donor, whose name would be placed on it.

FIG. 5.



The automobile together with the dark tent in position.

FIG. 6.



Interior view of the dark tent during X ray examination.

The appended photographs, with permission to make use of them, have been kindly lent me by the Présidente of the Croix Rouge.

Basil-street, S.W.

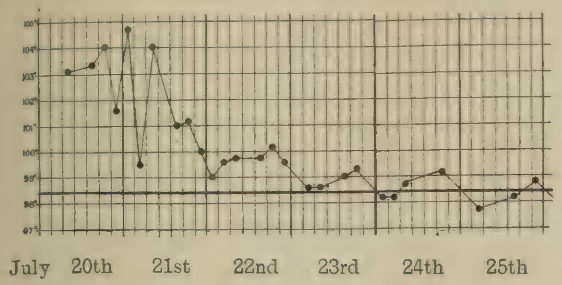
BLACKWATER FEVER.

BY R. W. BURKITT, F.R.C.S. IREL.

SEEING that "blackwater fever" is a disease with such a frightful mortality and that its treatment so far is not satisfactory, I consider that I am hardly justified in waiting for further cases before recording what seems to be the wonderful effect of neosalvarsan on it, as judged by these two cases (the only cases of this disease on which I have used it). The earlier case was in practically a hopeless condition and having rigors continuously when I gave him the neosalvarsan. The latter case was given neosalvarsan four hours after the blackwater appeared.

CASE 1.—The patient, aged 28, a professional white hunter, of temperate habits, had had "fever" on and off for a year. Quinine had been taken very irregularly. The spleen was a little enlarged. The laboratory report on the blood on July 20th, 1914, stated that no malarial parasites were present; some unknown bodies were seen; on the 28th no malarial parasites were seen. The urine report on the 20th stated that there were oxy- and methæmoglobin (very heavy), epithelial and granular casts, and an enormous quantity of débris. The progress of the case was as follows. On July 20th the patient had had no sleep. The urine was inky-black, acid, and HbO was present. Jaundice was deep and increasing. There was constant vomiting; the vomit was quite black. The spleen was just palpable. At 10 A.M. the temperature was 103·1° F. An intravenous injection of hypertonic solution (Rogers), 4 pints, was given, also pituitary extract. At 2 P.M. the temperature was 103·4°. Morphine, 1/4 grain, and hyoscine, 1/100 grain, were given. The vomiting stopped for six hours. At 6 P.M. rigors occurred; the temperature was 104°. $CaCl_2$, 30 grains, was given. At 10 P.M. the temperature was 101·6°. On the 21st the patient had had no sleep. HbO was present in the urine. At 2 A.M. there were rigors; the temperature was 104·7°, falling at 6 A.M. to 99·5°. At 10 A.M. there were again rigors; the temperature was 104°. Neosalvarsan, 0·9 grm., was given intravenously with 2 pints of saline. Two hours after the infusion the patient said that he felt cured; the vomiting ceased; the temperature was 101°. On the 22nd he had slept well. The urine contained a trace of HbO. The temperature was 100·1° at 6 P.M., and then ranged between 99·3° on the 23rd (6 P.M.) and 97·6° on the 25th (noon), being 98·6° on the 26th (8 P.M.). HbO was completely gone from the urine on the 23rd; on the 24th a trace of albumin was present, but no trace on the 25th. On the 24th the spleen was not palpable. The patient was given $CaCl_2$, 10 grains, twice daily, and an iron and arsenic tonic. He felt desperately weak but rapidly improved, and joined the Mounted Forces on August 8th.

Four-hour Chart.



CASE 2.—The patient, aged 50, married, was robust and of very temperate habits. He had had "blackwater" very badly 25 years ago, and migrated from Rhodesia to British East Africa to try to get rid of the effects of it, which kept him weak for five years. For the last four months he had been having "fever" on and off, and had been taking a good deal of quinine both by mouth and needle. During the past few weeks he had been getting very low. He had been trading for the last four months in Uganda and Kavarondo. The laboratory report on the blood, which was taken at 6 P.M. on Dec. 17th, 1914, just before the infusion of "914," showed that there were no parasites. On the 15th the patient had fever all day, feeling very ill. On the 16th he had had no sleep. He was retching all day and was very ill. The urine was acid and normal. At 10 A.M. the temperature was 100° F. He was given quinine, 10 grains, which was vomited. At 10 P.M. there was very high fever, but the temperature was not taken. He had quinine, 10 grains, which was retained. On the 17th he had had no sleep. He was retching all day and was very ill. In the afternoon he was jaundiced. At 2 P.M. there were very severe rigors; the temperature was not taken. The urine was as black as ink, very thick, and hard to pass. At 6 P.M. the temperature was 100°. He received an intravenous injection of neosalvarsan 0·9 grm., with two pints of saline; also morphine, 1/6 grain, and hyoscine, 1/100 grain. The laboratory report on the urine before the infusion stated that it contained an enormous quantity of oxyhæmoglobin, a certain amount of methæmoglobin, and an immense quantity of débris. At midnight the temperature was 98·4°. On the 18th he had slept well all through the night. The urine contained no HbO; there was a slight trace of albumin. The temperature was 97·6°. On the 19th the temperature was 97·6°. There was no trace of albumin in the urine. The patient was very weak, but was improving rapidly. $CaCl_2$, 10 grains twice daily, was given, and an iron and arsenic mixture. On the 23rd there were no parasites or pigment in the blood; there were poikilocytosis and polychromatophilia. The white cell count was: polymorphs 56·5 per cent., large mononuclears 13·5, lymphocytes 28, and eosinophiles 2 per cent.

Nairobi.

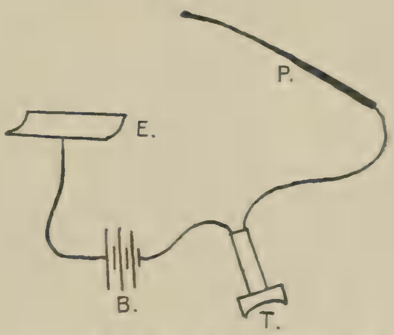
THE THEORY OF THE TELEPHONE PROBE.

BY R. G. CANTI, M.R.C.S. ENG., L.R.C.P. LOND.,
JUNIOR DEMONSTRATOR OF PATHOLOGY, ST. BARTHOLOMEW'S HOSPITAL, LONDON.

WHILST nothing but the simplest electrical phenomena are involved in the theory of the telephone probe, nevertheless an exact knowledge of it is necessary both that the operator may appreciate what is happening when the sounds reach his ears, and that the instrument may be so employed or modified that the most satisfactory results may be obtained.

The instrument was designed for the location of bullets and other foreign metallic matter within the human body. It consists essentially of a telephone receiver, one terminal of which is electrically connected with the skin of the patient by means of a flat electrode covered with wet cloth, whilst the other terminal is connected with a metallic probe. A dry battery may or may not be inserted in series with the telephone. The probe is introduced along the track of the bullet, and on contact being made with the latter a sound is produced in the telephone. (Fig. 1.)

FIG. 1.



Telephone probe. B, Battery. E, Electrode. P, Probe. T, Telephone.

r = Resistance of the tissues and telephone (a constant). r^1 = Resistance of the area of contact of the probe with the tissues. r^2 = Resistance of the area of contact of the bullet with the tissues. It is proportional to the area of the surface of the bullet, and therefore approximately to its size.

The intensity of the sound in a telephone is proportional to the current which is suddenly made to flow through it (within the limits for which the telephone is designed), and this is equal to the electromotive force divided by the resistance of the circuit. Or, $C = \frac{E}{R}$.

Now, suppose an attempt is made to locate a bullet in a patient. Directly the probe touches the tissues the resistance of the circuit is lowered from infinity to some high figure, and a current begins to flow. A click is heard in the telephone, but instantly the flow of current becomes even, and the sound ceases because the diaphragm of the telephone is again stationary. The current which caused the sound and which is now flowing is represented by $C = \frac{E}{r+r^1}$. The diaphragm, however, is slightly drawn in towards the magnets so that, if the probe is withdrawn from the wound, at the moment of breaking contact another click is heard which is caused by the return of the diaphragm to its original position. These sounds are always heard but must be ignored. When the probe is pushed further and further into the wound the quantity of r_1 is decreased, by reason of the increased area of contact of the surface of the probe with the tissues, and the flow of current through the telephone is therefore increased. This takes place very gradually, and the diaphragm is attracted evenly and slowly towards the magnets and no further sound is produced.

Now suppose the probe touches the bullet. There is now an additional path of flow open to the current—that is, from the bullet itself to the tissues—and its resistance, r^2, being added in parallel to r^1, the total resistance of the circuit is suddenly lowered, the current therefore is increased and a sound is heard. The current now flowing is represented by $C = \dfrac{E}{r + \dfrac{r^1 r^2}{r^1 + r^2}}$. (When two resistances are in parallel the total resistance is equal to their product divided by their sum.) If the area of the bullet is large the resistance r^2 will be low and the sound in the telephone loud, and conversely a small piece of metal will give rise to a comparatively weak sound. Should the contact between the probe and the bullet be now broken another sound will be audible in the telephone, and, further, an irregular grating sound will be heard as long as the probe is rubbed up against the bullet and the contact continually broken and remade.

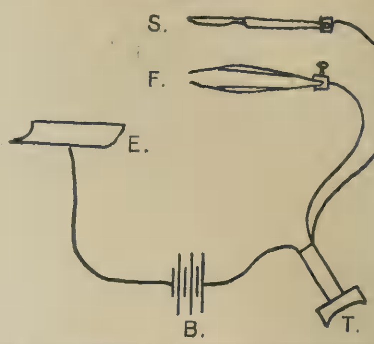
As regards the various factors which determine the efficiency of the apparatus, the following points should be noted.

1. *Sterilisation.*—All those portions of the instrument which come in contact with the tissues or the surgeon's hands should be capable of being easily detached for sterilisation and made of such material as will not deteriorate by boiling or other means employed for rendering them aseptic. As it is not necessary for the leads to be highly insulated, they may conveniently be made of bare flexible woven copper cord, which can be boiled along with the other instruments and has the advantage of not easily becoming entangled or kinking.

2. *Uses and limitations.*—Any good electrically conducting body, even if extremely small, is readily detected, and other solid material such as bone gives rise to no sounds whatever. Bullets, shrapnel, and other pieces of metal can thus be located where the simple probe fails to give any tactile sensation, or when the tactile sensation of bone may lead the operator astray. The instrument should comprise, besides probes of various sizes, one or more pairs of forceps for extracting bullets which can be rapidly and easily placed in the circuit in like manner to the probe. In the case of the forceps each limb should be separately connected with the lead, as otherwise sounds may be obtained by the rubbing together of the two halves of the forceps. Should other instruments be required for use at the same time they may be all connected up to the same lead by copper cords, placed in the instrument tray when not in use, and used if necessary more than one at a time; being all of the same potential they will not produce sounds in the telephone when they touch one another. Since a piece of metal the size of only a small fraction of a needle can so readily be detected, this method used with a scalpel and dissecting forceps connected in the circuit should prove very valuable for the difficult and tedious surgical operation of searching for a needle in the hand. (Fig. 2.)

It should be distinctly understood that the instrument is only of real value when the ordinary methods of detection are of no avail, and when the X ray, if obtainable, is deceptive.

Fig. 2.



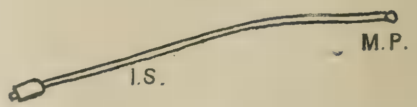
Same as Fig. 1 with scalpel and forceps in place of probe. S, Scalpel. F, Forceps.

3. *The telephone.*—This part of the instrument should be highly sensitive to the slightest variations in current, and should be by a reliable maker, as an inferior article gives poor results. A pair of telephone receivers should be used connected together with a head-piece, and having a total resistance somewhere between 100 and 1000 ohms.

4. *The source of the current.*—Many telephone probes are not supplied with a battery, but are designed to be used with the small current generated at the area of contact of the body with the electrode, which is sometimes made of metal and sometimes of carbon. The potential of this skin current is only a small fraction of a volt. Much louder sounds are obtained, and much smaller pieces of metal can be located by employing a few dry cells in series with the telephone. Two batteries as used in small flash-lamps and having a potential of 6 volts are sufficient. The reason why a higher voltage is more advantageous is that, all other conditions being the same, there is a greater difference in the amount of current flowing through the telephone before and after contact with the bullet, and therefore louder sounds are obtained. By referring to the formula $C = \dfrac{E}{R}$ it follows that, when the probe touches the bullet and the value R is suddenly lowered, the higher the value of E, the greater will be the current made to flow suddenly through the telephone.

5. *The probe.*—Finally the instrument can be rendered markedly more efficient if an "insulated probe" be used in place of the ordinary bare probe.

Fig. 3.



The probe. I.S., Insulated shaft. M.P., Metallic point.

(Fig. 3.) By again referring to $C = \dfrac{E}{r+r_1}$ (before contact with the bullet). $C = \dfrac{E}{r + \dfrac{r_1 r_2}{r_1 + r_2}}$ (after contact), it is seen that a much greater increment of current will result if the resistance r_1 is high. And as r_1 is the resistance between the probe and the tissues, the area of the former coming into contact with the latter should be reduced to a minimum. In order to achieve this the probe should be made of silver or some other non-corrodible substance, with a small knob at the end, and with the shaft covered with white gum-elastic material which will not deteriorate by the ordinary methods of sterilisation. This insulated probe is further advantageous in that instruments not connected in the circuit may be passed along it without creating sounds in the telephone.

N.B.—Since the above description was written, Mr. Gillies has afforded the benefit of his experience by the following valuable suggestion. The lead usually connected with the probe is connected to an electrode secured on to the operator's arm, whilst the probe is held in the hand and used without any metallic connexion with the rest of the apparatus. By this means the current is made to flow through the body of the operator in addition to its usual course. This it will do without appreciable loss of efficiency, the only points to be observed being that the hand must be wet and must not be covered with a rubber glove. The advantages are that instruments do not have to be attached and detached continually, and that any instrument can be used which has not been specially made to fit the apparatus.

THE SIGNIFICANCE OF NUCLEAR VARIATIONS OF NEUTROPHILE LEUCOCYTES (ARNETH COUNTS) IN WEST AFRICA.

By J. W. SCOTT MACFIE, M.A., M.B. CANTAB.,
WEST AFRICAN MEDICAL STAFF.

RECENT investigations into the effect on white men of residence in a tropical climate have shown that a definite change may be observed in the blood—namely, a "shift to the left" of the Arneth count. Chamberlain and Vedder (1911) made Arneth counts on 72 American soldiers in the Philippines, and for comparison on 50 Filipinos. They concluded that "the average Arneth picture showed a marked shift to the left in the case of Filipinos and a slight shift in the same direction for Americans resident more than one year in the Philippines." More recently Breinl and Priestley (1914) performed Arneth counts on 150 school children living in tropical Queensland, and found that they showed "a marked shift to the left, the Arneth index being 74·5 as compared to 40 for normal individuals (Arneth) in Europe," and they expressed the opinion that this change was "due to the effect of a tropical climate upon the white race living in the tropics."

The exact significance of this "shift to the left" in the Arneth count is not yet determined with certainty, but is by most authors considered to be "the expression of a lowered resistance of the body to infection." Arneth himself believed the neutrophiles of his Classes I. and II. to be immature leucocytes. Breinl and Priestley, however, dissent from this view, pointing out that according to Busse (1910), and to some experiments of their own, no difference in the phagocytic power of the neutrophile leucocytes belonging to the different classes distinguished by Arneth could be demonstrated *in vitro*. These authors express the opinion that the shift is the outcome of purely climatic influences, and point out that it becomes more pronounced after a prolonged residence. The phenomenon is at any rate an extremely interesting one in view of the tendency at the present time to deny that climate in itself affects Europeans in the tropics.

A number of Arneth counts were performed at Accra during the latter months of 1914 on sick and healthy Europeans and natives. The investigations are still being carried on, and a complete account of the results obtained will be delayed until later. It may, however, be stated at once that malaria infections appeared to have a marked effect on the Arneth blood picture. In a number of cases of malarial fever in which there was a heavy infection with the subtertian parasite (P. falciparum) there was found to be a well-marked "shift to the left" of the Arneth count, and this phenomenon persisted after all parasites had vanished from the blood, and after the patients had recovered from the attacks. Details of only one case need be given here (see Table). This was a fatal case of malaria in which 47·65 per cent. of the red blood corpuscles were invaded by parasites. On performing an Arneth count it was found that no less than 95·5 per cent. of the neutrophile leucocytes belonged to the Classes I. and II. The great majority of the neutrophile leucocytes had sickle-shaped nuclei.

Table showing Arneth Count in an Exceptionally Intense Malarial Infection (P. falciparum).

—	Arneth classification per cent.					Index.
	I.	II.	III.	IV.	V.	
Normal in Europe (Arneth) ...	5·0	35·0	41·0	17·0	2·0	40·0
Intense malarial fever	78·0	17·5	4·0	0·5	0·0	95·5

In this case the neutrophile leucocytes had ingested a large number of malaria parasites which were clearly visible in their cytoplasm. It was therefore possible, using the number of these as an index, to gauge the phagocytic power of the various cells *in vivo*. As, however, the leucocytes of Classes I. and II. predominated to such a marked extent, it was difficult to find a sufficient number of those belonging to the higher classes for comparison. It was nevertheless noted that the leucocytes in which the ingested parasites were most numerous were almost always those of Class I., some of which contained as many as 30 or 40 crowded into their cytoplasm. This observation would seem to indicate that there is at least no reduction of the phagocytic activity in the neutrophile leucocytes of Arneth's Class I. The observation also supports the view of Breinl and Priestley that "the Arneth picture is an expression of the functional activity of the leucopoietic system"; for if their hypothesis were true, it would be in such diseases as subtertian malaria, that profoundly affect the spleen and the bone marrow, that one might expect to find a marked "shift to the left" indicating a morbid activity of these tissues.

It is not my intention to discuss the matter further at present, as I hope to return to the subject at a later date; but it may be pointed out that in interpreting the significance of a "shift to the left" in the Arneth blood counts in West Africa the bearing of malarial infections, both recent and more remote, will have to be carefully considered.

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The Laboratory, Accra.

Clinical Notes:
MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

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EXTRA-UTERINE GESTATION SIMULATING APPENDICITIS.

By E. Mansel Sympson, M.A., M.D. Cantab., M.R.C.S. Eng.,
MAJOR, R.A.M.C. (T.F.); HONORARY SURGEON, LINCOLN COUNTY HOSPITAL.

On April 18th, 1914, a married woman, aged 22 years, was admitted into the County Hospital, Lincoln, under my care, suffering apparently from an attack of appendicitis. The following history was given. The first serious attack of pain in the right side of the abdomen came on on April 13th and continued off and on till another more serious attack on the evening of the 17th, accompanied by vomiting. The patient had had two children, the last of whom was born on Dec. 1st, 1913. A menstrual period had ceased at the beginning of April, but some loss appeared on April 13th and continued till the day of operation. There was tenderness in the right iliac fossa on deep palpation, but no definite swelling, and the abdomen moved freely on respiration. The temperature was normal; the tongue only slightly coated. As she was menstruating and the pain seemed to be leaving her, I decided to wait a few days before operating.

On April 29th I made the usual incision for appendicectomy, and on opening the peritoneum found that part of the abdomen occupied with blood clot and some fresh blood. This at once suggested extra-uterine pregnancy, so I closed the wound, opened the abdomen in the middle line, washed out the hæmorrhage, found, tied, and cut off the right ovary and tube, of which the outer third was much enlarged, and in which the gestation sac was situated. This had burst intraperitoneally, and was probably, judging also from the patient's history, of about 11 to 12 weeks' growth. The uterus was somewhat enlarged, and slight hæmorrhage had occurred through the cervix.

The after-history is unimportant, as the patient made an excellent recovery, and was discharged from hospital on May 19th, 1914.

A very similar case came under the care of my colleague, Major D. J. G. Watkin, at the hospital, almost simultaneously.

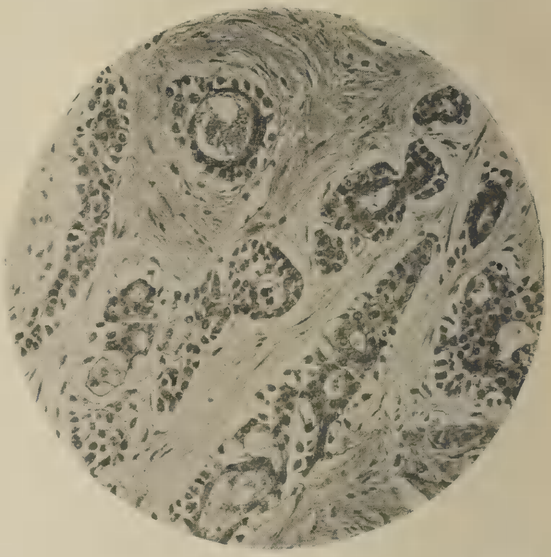
Lincoln.

NOTE ON A TUMOUR OF THE MAXILLARY ANTRUM.

By H. N. Taylor, M.A. Cantab., M.D. Dub., F.R.C.S. Edin.,
MAJOR, R.A.M.C. (T.F.); SURGEON, EBBW VALE HOSPITAL, MONMOUTHSHIRE.

On Feb. 15th last Mrs. ——, aged 34 years, came to the hospital as an out-patient, complaining of pain "in the right side of the face." On examination there were pain and tenderness over the right cheek, with apparently some little bulging of the affected side, with symptoms of neuralgia of the right infra-orbital nerve. There was no nasal discharge, no obstruction of the nasal duct, and no exophthalmos. The teeth had been extracted some months previously with an idea of relieving the pain, but the symptoms had become more pronounced rather than improved. Internally there was a distinct prominence of the antral wall over the alveolus, with a sensation that the wall of the cavity was "thinned out." On transillumination the right side was found to be quite opaque, in marked distinction to the rosy glow transmitted through the left maxillary region.

I admitted the patient to the hospital and subsequently opened somewhat freely the antrum over the alveolus. A hard, indistinctly lobulated tumour presented itself, which was, with some difficulty, delivered through the opening. It proved to be a dense greyish-white conical growth about two and a half inches long with a base of about an inch, one edge of which was partly attached to a small bony ridge in the antral cavity, which I snipped off to complete the removal. On cutting into the growth the appearance suggested a fibroma with a few small hæmorrhages into the substance of it. I, however, sent a piece of the growth to the Clinical Research Society, and append the society's report and a micro-photograph :—



This is a very unusual form of growth, and its nature is quite obscure. It is largely composed of tough, fibrous tissue, but all around near the surface there are masses of gland-like elements and lymphatics with proliferating epithelium. This portion suggests an endotheliomatous growth not unlike some forms of parotid endothelioma, and if this is the true nature of the tumour, then the bulk of it must represent a fibrous transformation. There is no normal tissue present, so that we cannot say whether there is any infiltration, but the appearances do not suggest malignancy. The magnification is × 200.

The cavity rapidly filled up and the patient left the hospital in a fortnight very satisfied that the constant pain she had suffered for over 12 months was now completely—and I hope permanently—removed.

Ebbw Vale, Mon.

Donations and Bequests.—Subject to certain life interests the late Mr. Thomas Ballington, of Edgbaston, Birmingham, has left by will £2000 each to five Birmingham hospitals, £500 to the Birmingham General Dispensary, and smaller sums to 10 other medical charities in Birmingham.—By the will of the late Mr. A. Sutton, of West Bromwich, the Eye Department of the West Bromwich District Hospital and the Ackrill Nursing Home will each receive £1000.—The St. Albans Hospital and the West Herts Hospital will receive £2000 and £1000 respectively under the will of the late Mr. Charles Woollam.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF ANÆSTHETICS.

The Influence of Preliminary Narcotics on General Anæsthesia.

A MEETING of this section was held on March 5th, Dr. HAROLD LOW, the President, being in the chair.

Dr. J. BLUMFELD, after referring to the previous discussion on this subject four years ago, when the procedure was novel and very diverse views were put forward as to its value, said that further experience had enabled us to exercise discrimination and to declare that there were cases where this method was of the greatest value, and others where it should not be employed. The first point which he wished to raise was the routine use of preliminary narcotics. His own view was that none of these drugs should be employed as a routine except atropine. It was not a reasonable course of action to prescribe morphia and scopolamine for patients whom they had not seen beforehand, or unless at least they had satisfied themselves that in every probability these drugs would not upset the patient. It was also necessary that the patient should not have to walk or be disturbed before the operation. It was particularly in hospital practice that he objected to their routine use, because it often happened that the experienced anæsthetist who was expected did not actually give the anæsthetic, which then fell to the lot of an inexperienced junior, who would not have had a preliminary injection given had he known he was to be the anæsthetist. These remarks did not apply to atropine which rendered convenient the free use of open ether. Again, the case might turn out to be one in which deep chloroform anæsthesia was indicated, and he thought that was not a method to be safely practised. The advantages to be derived from the use of these narcotic drugs were, firstly, a quiet induction with a patient indifferent or asleep; secondly, a diminished consumption of anæsthetic; and, thirdly, diminution or absence of all deleterious after-effects. Scopolamine alone, or combined with morphine, was more potent and gave great help in highly nervous individuals. Yet there were cases in which these drugs caused nausea or excitement. Again, these drugs, in his opinion, prolonged induction and particularly delayed complete muscular relaxation. With regard to after-effects, the balance of evidence was in favour of the good results from scopolamine with or without morphia. Sickness was sometimes delayed; more often it did not occur or was slight. He preferred to use these drugs in highly nervous individuals, in all long nose and throat cases, and in all very muscular, plethoric, or alcoholic individuals. In the nose and throat cases a light degree of narcosis was possible with unabolished cough reflexes.

Sir FREDERIC HEWITT said that he had a high opinion of the use of preliminary narcotics, provided care and discretion were exercised. Whenever practicable the anæsthetist should see his patient some time before the operation. In certain special cases a trial administration might be made a day or two before the operation. He had no doubt as to the general advantages of the plan of preliminary narcotisation. Atropine was very valuable in preventing nasal or oral secretions. He had never seen any contra-indications to its use. He had of late become rather shy of scopolamine except in cases where definite pre-anæsthetic stupor was indicated. Provided there were no contra-indications, he was inclined to use morphine and atropine, ¼ gr. for adult males, 1/6 gr. for women, with 1/150 gr. of atropine, before practically every operation. He preferred freshly prepared solutions to tabloids. Morphine should not be given to patients suffering from respiratory difficulties, nor in throat, nose, and mouth operations liable to be attended by hæmorrhage, unless a light anæsthesia was maintained. He did not think the profession fully realised the importance of a rapid return of the reflexes after these operations. He agreed that the sleep-like breathing of morphinised patients sometimes prolonged the administration. He did not remember any case in which marked slowing of breathing had taken place during full anæsthesia.

Dr. W. H. TATE was entirely in favour of the preliminary use of narcotics, either morphine and atropine alone or combined with hyoscine. Hyoscine was not advisable in old and feeble patients. In his experience, which embraced operations chiefly on the lower abdomen, there had been no difficulty in obtaining satisfactory relaxation. In many cases the patient's senses were partly dulled, in some there was entire freedom from nervous tension. It was quite an exception for any troublesome sickness to occur.

Dr. JANE TURNBULL agreed with Dr. Blumfeld that the use of atropine alone was very satisfactory, and the use of morphine and atropine in operations on the nasal passages was of great value.

Dr. Z. MENNELL completely agreed with Dr. Blumfeld's conclusions. He thought it must be generally allowed that scopolamine sometimes made difficult complete relaxation in high abdominal cases.

Mr. H. E. G. BOYLE thought that the discussion had emphasised one point—viz., that anæsthetists ought to see their patients a day or two before the operation. It was obviously wrong to prescribe a routine dose of any narcotic without first seeing the patient. It was an important point that patient and anæsthetist should not be strangers on the morning of operation. He had found recently that a fairly strong dose of morphine and scopolamine with atropine had been of benefit during the induction of soldiers who, although outwardly calm, were one and all nervous. A great drawback was the intense thirst and dryness of the mouth produced.

Dr. G. A. BARTON had practically adopted the administration of narcotics before anæsthesia as a routine method during the last three years. He thought solutions were better than tabloids. Owing to the depression of the respiratory centre induction was slower than usual unless, as in his own practice, ethyl chloride were added to the chloroform, or ether or combinations of these agents used for induction. Struggling was less marked. The best results during anæsthesia were obtained by a full dose of morphia and scopolamine, say ¼ gr. and 1/100 gr. as a routine, with more morphia for strong big men, with the subsequent use of the minimal dosage of open ether. He liked to keep a brisk corneal reflex. With this form of narcosis shock practically never occurred. He had practically given up strychnine or pituitrin saline infusion, and artificial respiration. He deprecated the use of chloroform with narcotics. After referring to the dangers of chloroform and the work of Dr. A. G. Levy he said that following the use of alkaloids and open ether the patient generally slept comfortably, and was rarely troubled with vomiting or other discomforts. One occasionally came across cases of idiosyncrasy to morphine and scopolamine.

Dr. F. E. SHIPWAY said he was entirely in favour of preliminary narcotisation whenever possible. It was a kindness to the patient and a help to the anæsthetist. He preferred morphine and atropine for the majority of cases, with the addition of scopolamine for very nervous patients. Scopolamine sometimes made induction slow, and delayed the onset of complete muscular relaxation in operations upon the upper abdomen. Small doses of morphine with atropine were an advantage in operations upon the nose, throat, and mouth. As regards after-results, patients made a better recovery if narcotics had been given. He thought that flatulence was not, on the whole, increased. Chloretone could be substituted for morphine in selected cases; he had found it useful sometimes for patients who had on previous occasions been much troubled by vomiting.

The PRESIDENT said that most anæsthetists were now able to give an expert opinion as to the advisability of using narcotic drugs as a preliminary to anæsthesia. He quite agreed with Dr. Blumfeld that their routine use in hospital practice was not advisable. In unskilled hands their use was not free from risk. At St. Thomas's Hospital the resident staff were not allowed to use narcotic drugs. Deep chloroform anæsthesia should never be induced subsequent to their administration. He had never seen any ill effects from the use of atropine. He was in favour of the use of morphine and atropine in skilled hands and in selected cases, but he was not so certain of scopolamine, the action of which was not always to be depended upon. Following the use of morphine and atropine the patient was asleep or in a state of quietude, less anæsthetic was required, and post-anæsthetic sickness was rare. He hoped that if he had ever to undergo an operation he might be given a preliminary narcotic injection.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF STATE MEDICINE.

The Recent Outbreak of Cerebro-spinal Meningitis in the Dublin Military District.

A MEETING of this section was held on April 16th, Dr. T. P. C. KIRKPATRICK, the President, being in the chair.

Dr. G. E. NESBITT gave an account of the recent outbreak of cerebro-spinal meningitis in Ireland. Eighty-nine cases had been notified to the Local Government Board since Jan. 28th last, of which 30 had occurred in the Dublin Military District, with which his remarks were chiefly concerned. The mortality rate, so far as his figures were available, was 50 per cent. The features of the outbreak were in accordance with general experience. No source of infection could be ascertained in the majority, and no two cases occurred in the same building. He emphasised the importance of early diagnosis, if necessary by lumbar puncture, and pointed out that in Ireland in civil practice too little attention was paid to the examination of contacts. In military practice the greatest importance was attached to this matter, and careful search was made for carriers. He sketched briefly the routine method of examination and the steps employed to limit the extension of the disease.

Professor E. J. MCWEENEY said the disease was one that had an intense attraction for the pathologist. He suggested as an explanation of this disease that the cases of cerebro-spinal meningitis that occur only constitute a small minority of the cases of an epidemic catarrhal affection; the mystery of the disease would then disappear, leaving a widespread catarrhal affection all over the country, with here and there a meningitic complication. How the diplococcus got from the pharynx into the cranial cavity had been under investigation for a long time, and light had recently been thrown on this by the discovery of the meningococcus in the blood. He recommended that in a case of suspected meningitis 10 c.c. of blood should be removed from the arm for examination. He also impressed upon clinicians the necessity for doing lumbar puncture early, and said it would be found to be a matter of extreme simplicity if the proper needle was used. He pointed out that one of the leading features of this bacillus was its extraordinary tendency to die off, and he considered that this might be due to the fulminating character of the micro-organism, and it was just possible that the fulminating cases were the ones in which there was difficulty experienced in getting the organisms.

Sir JOHN MOORE compared the statistics of cerebro-spinal fever with those of whooping-cough. In the 13 weeks ending April 3rd the deaths from the latter disease numbered 98, as compared with 8 from cerebro-spinal fever, and notwithstanding the enormous toll exacted by whooping-cough amongst infants it was not a notifiable disease. He was glad that Dr. Nesbitt did not allude to that most misleading term "spotted fever," and he would like to know if any of his cases were marked by purpuric eruption.

Dr. J. A. MATSON mentioned two cases of the disease which came under his care. One of them was so spotted that he thought at first it was a case of typhus fever, and the other showed no spots. In both cases the patients recovered.

Dr. J. MARSHALL DAY said six of the cases came under his care. Two of them came from outside the city, and were therefore not notifiable in the Dublin registration area. All the patients died with one exception. All patients admitted to hospital were given spinal injections, but he had very little success with serum except in the one case. Referring to cases of a prolonged type, he recalled the case of a child in which he tried injections of fibrolysin, and the patient rapidly improved and was discharged, but came back a fortnight afterwards stone deaf. In another case a child was nearly blind; fibrolysin was tried and the sight came back. Although full investigation was made in two of the cases admitted, no connexion with any previous cases could be found.

The rest of the meeting was occupied by a paper by Sir JOHN MOORE on the exploitation of medical men in the matter of medical certificates. We notice the communication elsewhere.

Reviews and Notices of Books.

The Minor Horrors of War.

By A. E. SHIPLEY, Sc.D., F.R.S., Master of Christ's College, Cambridge. London: Smith, Elder, and Co. 1915. Pp. 166. Price 1*s*. 6*d*.

THIS little book can be recommended, not only to the medical staff of the Expeditionary Force, but to all who are living in camp, bivouacking, travelling in hot countries, or are in any way deprived of the means of securing an ideal cleanliness of person. It tells all that anyone can need, and more than most people desire, to know about insect plagues and how to circumvent them; and, secondly, it has been, as the author admits, "written in a certain spirit of gaiety," and thus makes entertaining the study of a subject in itself rather repulsive.

Beginning with the louse, the author mentions that typhus fever has been proved to be spread by P. vestimenti in a recent outbreak in Ireland; both this species and P. capitis spread relapsing fever. The first rule in dealing with the parasite is to search the person as often as possible for signs of its presence, and then to apply petrol, paraffin, or other insecticide, and to examine and treat the clothing. The wearing of sulphur in calico bags, about 2 inches square, next the skin is also recommended. In regard to the bed-bug Professor C. J. Martin's statement is quoted, that there is really no evidence to incriminate this insect in the case of either typhus or relapsing fever, and no epidemiological reason for supposing that infection by its means takes place to any extent in nature. Fleas and lice suck blood several times a day, but bugs "show no disposition to feed for a day or two after a full meal; their dejections were found to be fully digested, almost free from protein, and consisted mostly of alkaline hæmatin." It is pointed out that the wooden huts which have been erected to so great an extent recently will afford convenient quarters for bugs. Against them fumigation with sulphur is recommended: it is much less expensive and less dangerous than using hydrocyanic acid gas; also the "flares" used by painters for burning off paint have been found to exterminate them from match-boarding and wainscoting. The establishment of the fact of the conveyance of plague by means of fleas has removed them "out of the category of those animals which it is indelicate to discuss," though, compared with the company to whom Dr. Shipley has already introduced his readers, the flea is socially unobjectionable. The common idea that the chief occupation of monkeys (at any rate in the Zoological Gardens) is the chase of the flea is declared to be erroneous; we are told that "no fleas have been found truly parasitic on monkeys," although usually in confinement a human flea attacks them, which implies that it is the monkey that has ground for complaint. The relation of fleas to plague is described, and the efficacy of cowdung floors for keeping them away is vouched for.

The ingenious and important researches of Lieutenant-Colonel W. W. O. Beveridge, R.A.M.C., and Mr. Durrant on the moth which infests army biscuits (Ephestia Kühniella) are summarised. The best way of getting rid of the pest is thorough fumigation of the flour mill premises with carbon bisulphide, but it is judiciously recommended that "as this substance is not only poisonous but inflammable, it is well to get a chemist to undertake the proceeding, and also to notify the insurance company." The pathetic story is told of the troops in Egypt in 1801 whose biscuits were so full of worms "that the men could only eat them in the dark." The discussion of the pathogenic activities of flies takes two chapters, and this without entering on the subject of malaria at all. Mites, ticks, and leeches are fully illustrated, and their many activities described in detail, with apt quotations and illustrations. These chapters first appeared in the columns of the *British Medical Journal;* they are well worth reproduction in their present form.

There are rather more misprints than would be expected—"von Hinderberg" might be passed, but "*Hydrophylus*" hardly. We have to thank Dr. Shipley for a most useful and entertaining book.

Students' Text-book of Hygiene.

By W. JAMES WILSON, M.D., D.Sc. Belf., D.P.H. Cantab. London: William Heinemann. 1915. Pp. 270. Price 8*s*. 6*d*. net.

THIS text-book, which Dr. Wilson has based on courses of lectures given during the past seven years to the hygiene class of the Queen's University, Belfast, forms a handy little volume, well printed, light to hold, and essentially readable. It succeeds, we think, in going over the enormous territory which is now occupied by "hygiene" in a way well calculated to interest the student; and without burdening him overmuch with the laws, forms, and official schemes necessary for the practical administrator it gives a large amount of essential information. Reservations have occasionally to be made—for example, to the statements that on an average a quarter of a ton of refuse is produced per head of population per year; that carburetted water gas contains 30 per cent. of carbon monoxide; that good cheese usually contains three times as much fat as the same weight of meat, or that water "reservoirs should hold at least 150 days supply." But if in practice things are not so simple and straightforward as they may be represented in the lecture room, the student is none the worse for being put somewhere there or thereabouts on such questions.

It is evident that Dr. Wilson's book is the product of wide reading, and his short accounts of different matters are usually in very good perspective. Perhaps an exception may be made in respect of the chapter on infectious diseases, which seems to give too little consideration to their natural history, their occurrence as epidemics, and the degree to which they attack race, sex, and age. Dr. Wilson draws freely on recent contributions to knowledge in the matter of spread of infection by carrier cases, but we think that the present-day student, besides being taught the large number of difficulties which the carrier has removed, might well be given a caution as to the new difficulties which are thus created. Gilbert's saying that when everyone is somebody no one is anybody deserves to be remembered when the carrier is pressed overmuch in explanation of epidemic diseases.

MISCELLANEOUS VOLUMES.

THE public owes a debt of gratitude to the Trustees of the British Museum for their many excellent and cheap handbooks to the collections of specimens exhibited in their galleries. Another handbook to the series has just been added which explains in a succinct and admirable way the meaning of the interest which attaches to the discovery of the Piltdown skull, to which there have been many references in the pages of THE LANCET. *A Guide to the Fossil Remains of Man in the Department of Geology and Palæontology in the British Museum* (Natural History) is a little book of 30 pages which summarises the evolutionary theory of man through the primates and describes the Piltdown man, so far as we are able to conceive him, from the skull which was discovered by Mr. Charles Dawson in 1912. The reproductions of photographs of the fragments of the skull and the drawings of teeth, together with flints found in the river gravel at Piltdown, are admirably done, and the handbook should certainly find a place among the literature of the subject. The Guide can be obtained, price 4*d*., in London, at the Museum (South Kensington), of Messrs. B. Quaritch, and of Messrs. Dulau and Co.; in Birmingham, from the Midland Educational Company; in Manchester, from Messrs. Sherrat and Hughes; and in Glasgow, from the Grant Educational Company.

The war naturally continues to claim wide attention, and the output of books relating thereto is extensive. In *Thou Art the Man: the Story of a Great Crime* (London: T. Werner Laurie, Limited. 1915. Pp. 94. Price 1*s*. net), by Mr. SIDNEY DARK, the author endeavours to help those who do not read Blue-books to form a clear understanding as to why the war began, what exactly are the forces against which the Allies are struggling, and why we must fight until those forces are subdued. He tells the story of the German Empire and the atavism which now characterises it to impress the public with the fact that Prussianised Germany desires to force other peoples to be German whether they will or no.——In *How Belgium Saved Europe*, by CHARLES SAROLEA, with a preface by Count GOBLET D'ALVIELLA, Belgian Secretary of State, and a map of Belgium (London: William Heinemann. 1915. Pp. 226. Price 2*s*.), the author, who is the Belgian Consul in Edinburgh, has written a very readable book which, like the preceding, throws a great deal of light on Germany of to-day as distinguished from Germany of Lessing and Goethe, though its primary object is to present a record of Belgium's sufferings as a consequence of her rigid adhesion to duty. A chapter is devoted to a character sketch of King Albert, one of the most popular monarchs of to-day, while others give in well-chosen words a vivid picture of Belgium's martyrdom.——In *Nietzsche: the Preacher of War*, translated by HELEN ZIMMERN (London and Edinburgh: T. N. Foulis. Pp. 268. Price 1*s*. net), we are presented with views on religion, on virtue, on what is noble, and so on, but the views are not in accord with accepted principles of right and wrong. As a specimen of the teaching of Nietzsche the book is interesting.

JOURNALS AND MAGAZINES.

The Military Surgeon (*Chicago*).—In the March number Colonel H. P. Birmingham, Medical Corps, United States Army, Chief Surgeon of the United States Expeditionary Force in Vera Cruz, April 24th to Nov. 23rd, 1914, reports on the sanitary work done during the occupation. The sanitary problem was grave as there was small-pox in the city and the population was unvaccinated, flies were a "terrific" pest from want of scavenging, cerebro-spinal meningitis had been recently prevalent, the time for malaria was approaching, yellow fellow had indeed been mastered during the preceding five years, still there was tuberculosis (very prevalent) to beware of. Immediately on landing houses occupied as barracks were thoroughly cleaned and disinfected, company kitchens and messes were promptly screened, and 3-grain doses of sulphate of quinine were issued daily to the force. The army was protected against small-pox and typhoid fever, so these diseases caused no anxiety to the medical officers. Water carriage of excreta was generally available, but where necessary latrines were dug, fitted with fly-proof covers and burnt out (with 7½ lb. hay and 1 gallon crude oil) twice daily. Manure and rubbish were sent to the destructors; picket lines were kept clean and burnt over every week. Baths were installed, the disposal of waste waters was carefully watched, and 69,000 gallons of crude oil were used for oiling stagnant water, while in addition 61 miles of drainage ditches were dug. The hospitals and sanitary administration of Vera Cruz were taken over, the port and quarantine by that most capable body, the United States Public Health Service, the rest by the army. A small corps of specialist sanitarians was sent up from the canal zone, and many of the Mexican staff were induced to remain, and did well. 46,420 vaccinations were done. The city was inspected throughout every five days, and foods were all regularly examined. Deaths from malaria fell to one-tenth of the average. Venereal disease was limited by the issue of prophylactic packets to civilians as well to troops, and by the weekly examination of all suspected women, and the instructive figures are recorded that of registered women 25 per cent., and of clandestine prostitutes 90 per cent. were diseased. No typhoid fever occurred and no cerebro-spinal meningitis. Dysentery, fly-carried, did appear, in a few cases amœbic, in 76 cases bacillary (Shiga) with one death. The military hospital of 216 beds was established in a new and hitherto unoccupied school. A bacteriological laboratory was there established, was much used, and controlled all important clinical diagnoses. In consequence of all this "the occupation of Vera Cruz was attended by no higher percentage in the sick rate than for the troops in the United States." The details given in the paper are most interesting, and should be widely read, and Colonel Birmingham and the United States Army Medical Corps must be warmly congratulated on their splendid success.

The Eugenics Review.—The April issue opens with the second Galton lecture by Professor J. A. Thomson, to which we referred at length in our issue of Feb. 27th. This, together with a criticism of M. Guénot's "Preadaptation," by R. A. Fisher and C. S. Stock, and the Causes of Rise and Fall in the Population of the Ancient World, by Professor J. L. Myres, Wykeham Professor of Ancient History at Oxford, form the principal contents of the Review. The latter article gives us a "sample of ancient eugenics," covering 1000 years, and under the guidance of Professor Myres we see "populations overtaking the means of subsistence in a limited region; the relief of this congestion by colonisation oversea; the complete occupation and development of colonial regions; the pacific penetration of the regions of stable or less progressive culture by aggressive civilisation, itself in rapid development; forcible dispossession of obstructive occupants, and no less forcible elimination of competitors for maintenance within the home circle of the conqueror." "History," he says, "is as surely as geology a comparative science, and in the light of ...... fossil politics ...... we can estimate the outcome of policies and modes of life." He recognises, however, that we cannot be sure that no catastrophe will occur to change the course of nature altogether, and with this reservation the article is opportune when we are all speculating as to the probable course of history after the war.

The Cornhill.—To the May number of the *Cornhill* Mr. Gilbert Coleridge contributes a very human and valuable article, entitled "Thinking in Open Order." "We are," he says, "apt just now to blame the Kaiser personally for the atrocities committed by the German army in Belgium and France, but he is only responsible in so far that he has made no effort to discourage acts which were the logical result of the collective military training and habits of thought of his people. The point of view is well expressed in 'Friedens- und Kriegsmoral der Heere,' which Mr. William James quotes in his 'Varieties of Religious Experiences,' where the following frank statement appears: 'If the soldier is to be good for anything as a soldier, he must be exactly the opposite of a reasoning and thinking man. War, and even peace (*sic*), require of the soldier absolute peculiar standards of morality. The recruit brings with him common moral notions, of which he must seek immediately to get rid. For him victory, success, must be everything. The most barbaric tendencies in man come to life again in war, and for war's uses they are incommensurably good.' Whereupon Mr. James justly remarks: 'When we gravely ask ourselves whether this wholesale organisation of irrationality and crime be our only bulwark against effeminacy, we stand aghast at the thought, and think more kindly of ascetic religion.' How far the German soldier has been 'exactly the opposite of a reasoning and thinking man' his exploits in towns and in the open field will testify. The nation in its drunkenness has set out to paint Europe red, and is making a night of it; but 'after the shrimps, the bill'; after the orgy comes the headache in the morning, and when the light of truth breaks in upon a hungry peace and shows to the reveller the havoc of the night, it is possible we may keep a grain of pity for the deluded people who took no heed of what other nations thought, stifled independent criticism, and carefully arranged their thinking in close order. But not till after the handcuffs are on. It may be that they will readopt 'common moral notions.' Possibly they may come to realise that cleverness and thoroughness are not incompatible with sheer stupidity."

THE MEDICAL MAN'S INCOME-TAX.

(Concluded from p. 878.)

Circumstances in which Relief is Allowed.

THE importance of the accurate completion of the form of return under "Schedule D" may be gathered from the fact that there are at least five classes of relief which are allowed only when they are duly claimed—that is to say, the allowances for life assurance premiums, abatement, and children, and the separate reductions of duty admitted on earned incomes and on all incomes below certain limits.

The circumstances in which each description of relief is allowed are as follows:—

Life Assurance.—All annual premiums payable in 1915–16 on the life of the practitioner or his wife up to a limit of one-sixth of the total income, including annual sums paid for deferred annuities and on accident policies that cover the risk of death, and also a proportion of the premiums paid on combined (sickness and accident) policies that cover the risk of death.

Abatement of £160, £150, £120, or £70, where the total joint income of husband and wife does not exceed £400, £500, £600, or £700 respectively; total exemption where not exceeding £160.

Earned Income Relief.—A reduction of duty on the portion of the income that is earned, governed by the amount of the total income from all sources. The relief at present is at the rate of 1*s.* in the £ where the total income is under £1001; 9*d.* where under £1501; 6*d.*, under £2001; and 2*d.*, under £2501; and the reduction is allowed on the income remaining after the deductions for abatement, &c., have been made.

Small Incomes Relief.—This applies, in effect, to the income that would otherwise be charged at the full rate of tax, and is limited to cases where the total income from all sources does not exceed £500, the allowance being at the rate of 2*d.* in the £, unless the total income does not exceed £300, when the allowance is 6*d.* in the £.

Children.—An allowance of £20 from the assessment for each child or stepchild living and under 16 years of age on April 6th, 1915, where the total income does not exceed £500.

The cumulative effect of these rebates will best be explained by means of an example. Suppose a practitioner to earn £450 a year, to own a small property assessed to income-tax Schedule A on £25, to pay £30 in life assurance premiums, and to possess two children under 16 years of age, and a wife who has an income of £20 from dividends. His "total income from all sources" will be £495, of which £450 is earned. He will be entitled to an abatement of £150, allowance of £40 for the two children, and £30 for the life assurance premiums, leaving £230 professional income on which tax is to be charged. This £230 will, if present rates continue, be charged at the rate of 1*s.* 6*d.* (after allowance of the "earned income" relief of 1*s.* proper to an income below £1001), and he will further be entitled to the "small incomes" relief of 2*d.* in the £ on his property and on his wife's dividends. He should therefore be charged on £230 at 1*s.* 6*d.*, less £45 (£25 + £20) at 2*d.*, making £16 17*s.* 6*d.* net in addition to the tax paid on the property and dividends.

The Completion of the Return.

In completing the form the first step is to enter in Section B the amount of the professional profits on the average of the three years 1912, 1913, and 1914, after deducting the professional expenses, as previously explained, but without deduction for life assurance premiums. The words "including receipts from public appointments" should be added if such receipts have been included; otherwise the appointments should not be referred to on this page. In Section B should also be entered any other untaxed income that the practitioner may receive, such as bank interest, but not dividends paid "free of tax," an expression which means that the company has deducted the tax in computing the dividends. If the practitioner desires that his return should not come before the local Commissioners and collector he should here apply to be assessed by the Special Commissioners in London, a course frequently adopted by medical men.

The statement of total income from all sources to be made in Section D is of the greatest importance, since it is on the strength of this statement that the allowances for abatement, earned income, and small income relief are made. The declaration is required to show, in the first place, the professional income that has already been returned in Section B, and in addition the receipts from public appointments, unless these have been included in calculating the general professional income. Under the head of "property" should be entered the annual rentals, less one-sixth for premises that the owner repairs and less one-eighth in the case of land. Where the practitioner both owns and occupies the property the figure to be entered is the net assessment on which income-tax, Schedule A (property tax), has been paid, and it will often be found convenient to adopt this basis for all property. The space provided for income from the occupation of land applies only to persons occupying land other than an acre of garden round a house, the profits from such other land being taken at one-third the rental value. Interest and dividends which have been taxed before receipt (or entered in Section B) should be shown in the space provided, on the basis of the 1914 income, unless there is reason to suppose that the 1915 income will be materially different, in which case an estimate might be made. Full details are not usually required under this head, nor under the following head of Wife's Income, provided the income can properly be described as "taxed before receipt." Although a wife's income is required to be included in the statement, a practitioner who prefers not to set it out separately may include it with his own under the various heads and make a note on the form that he has done so. It may be remarked that where husband and wife conduct independent practices or otherwise earn money independently of one another, and the total joint income is under £500, they are entitled to two separate abatements.

There follows on the form a space for "charges on income," in which should be entered annuities, interest, ground rent, and other sums which the recipient of the income has to pay away to others. In making such annual payments income tax should be deducted from them at the full rate of tax, and the full rate will accordingly be charged on these sums, whatever relief may be allowed on the practitioner's other income.

Section E, which is provided for particulars of the life assurance premiums, presents no difficulty; and Section F, the claim for relief for children, calls merely for a list of the children born after April 6th, 1899, and before April 7th, 1915.

Partnership Income.

Section G of the form is devoted to a return to be made by the leading partner in a firm, or, where there is no precedence, by the partner whose name usually appears first in partnership documents. The partner on whom devolves the completion of this declaration is responsible in the first place for making the combined return of the partnership profits in one sum in Section B, and then for showing in the section now under consideration the manner in which the assessment should be apportioned between the partners. The return in Section B will be the total average profits of the joint practices for the three years 1912, 1913, and 1914 (after deduction of all expenses, including the expense of any separate professional establishments of the partners), and the idea of Section G is to indicate how this figure would be apportioned between the partners at the rate of division that will apply in the year 1915–16. Where the proportionate shares have varied over the three years that fact is immaterial; only the current rates of division have to be considered. The completion of this section is often found troublesome, but becomes comparatively simple if it is borne in mind that the object is to show how much each partner would draw in 1915 if the partnership profits for that year were equal to the sum returned for assessment. Thus, suppose the average profits to be returned at £1000, subject to a charge of £100 a year for interest or annuity to a third party, the sum to be divided will be £900. A is perhaps entitled in the year 1915 to draw £60 by way of special salary or interest and two-thirds the balance, B receiving the remaining one-third. The apportionment will then be shown as: A £620 (£60+£560) and B £280 (one-third of £840). There are, of course, cases in which the proper apportionment of the sum returned for assessment will have to be a matter of agreement between the partners on consideration of the normal professional expenses of each.

It is to be observed that although a combined return is required to be made of the partnership profits, each partner is personally entitled to a deduction from his share of the assessment on account of whatever allowance may be due to him in the way of abatement, life assurance, earned income relief, &c., and these he must claim on a separate form by completing Sections D, E, and F in the manner explained above.

Successions.

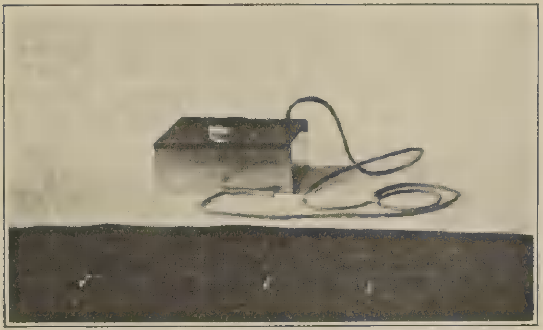
The successor to a practice is required to declare the average profits of the practice for the past three years to the best of his ability with the information at his command; the profits that he himself may have made elsewhere do not come into the computation. If he should take over the practice in the course of the year he will be liable for his portion of the assessment, but in such a case should communicate with the surveyor of taxes in order to ensure that the allowances to which he is personally entitled are made from the assessment. A successor who finds the profits less than the sum on which he has been charged may always claim relief, but if his profits should be greater that fact does not invalidate the assessment.

New Inventions.

A NEW TELEPHONE PROBE.

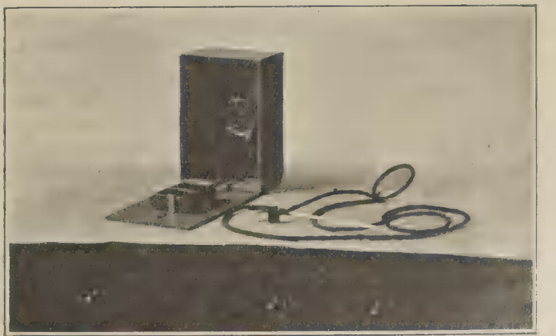
FOR a telephone probe provisionally protected by me last December certain advantages are claimed over others already in use. It should prove useful to the general practitioner for locating needles, &c., as well as to the military surgeon for detecting the presence of bullets or pieces of shrapnel and the like in wounds. The probe consists of a silver rod insulated from a sheath of the same metal, forming the two electrodes. They are attached to a plug by insulated wires encased in rubber tubing. In the lid of the box are fixed the plug-holder, a specially wound telephone, and a dry cell of the ordinary flash-light pattern. The latter, when exhausted, can be replaced for a few pence almost anywhere.

FIG. 1.



Plug of the telephone probe in its holder and the probe ready for use.

FIG. 2.



Interior of the box with the telephone probe detached.

When the plug is in its holder an electric current is established on inserting the probe into a wound, contact between rod and sheath being effected through the moist surfaces. Any disturbance of the flow or interference with the lines of force of the current, such as occurs when a piece of metal is touched by the probe, will be instantly indicated by an audible noise in the telephone. The chief points claimed for this probe are its simplicity, efficiency, and small liability to get out of order, and it can be used by one having no knowledge of electricity, as efficiently as by one well acquainted with its uses. There is nothing to fix on the head of the operator, nor on the body of the patient. The noise in the telephone has not to be listened for, it is quite audible to everyone in the neighbourhood. The probe can be bent about as freely as the ordinary surgical probe, and with its connecting wires and plug forms a unit that can be sterilised by boiling as often as required. It would be an easy matter to make the electrodes the blades of a pair of forceps, or to add a bell indicator, &c.; but while these might add to its interest the possible gain in efficiency would, generally speaking, be more than counterbalanced by the loss in simplicity.

These probes will be obtainable from Messrs. Allen and Hanburys, Limited, and other surgical instrument makers.

David Findlay, M.D. Edin.,
Medical Officer in Charge Electrical Department, West End Hospital for Nervous Diseases.

Reports and Analytical Records

FROM

THE LANCET LABORATORY.

(1) OXYNTIN; AND (2) ENZYMOL.

(Messrs. Fairchild Bros. and Foster, Albert Chambers, 64, Holborn Viaduct, London, E.C.)

1. Oxyntin is a light cream-coloured powder containing albumin combined with hydrochloric acid. It is miscible with water, the solution having a slightly acid taste. We found that the amount of acid present was just under 5 per cent. Oxyntin usefully replaces dilute hydrochloric acid in the treatment of gastric disorders. It is convenient for administration, and provides in that way a standard amount of hydrochloric acid. 2. Enzymol is a clear solution which shows great proteolytic activity analogous to that of the gastric juice. According to our examination, it acts rapidly on blood fibrin. It is specially prepared for external application as a solvent of albuminous matter, as, for example, false membrane in diseased and sloughing tissues. Its active proteolytic properties allow septic matter to be easily removed by irrigation.

DIFFUSOL.

(W. Martindale, 10, New Cavendish-street, London, W.)

Diffusol is an alkaline, soapy solution of specially purified ortho-, meta- and para-cresol. For surgical purposes the selection of a practically water-white and nearly odourless cresol is important. The diffusible and penetrating properties of this preparation were referred to in the recent Hunterian oration. We confirmed the statement that diffusol contains 50 per cent. of cresol by decomposing it with calcium chloride and caustic soda. On filtration the cresols are obtained in alkaline solution from which they are readily separated by the addition of an acid.

MALT EXTRACT WITH PARAFFIN.

(A. Wander, Limited, 43, Cowcross-street, London, E.C.)

In spite of this preparation presenting the appearance of a crystalline compound it contains, according to our analysis, no less than 50 per cent. by weight of petroleum, which confirms the statement made by the makers. With water it forms a perfectly uniform emulsion resembling milk. The fluid so obtained readily liquefies starch jelly, ultimately converting it into dextrin and sugar. The taste is pleasant, and the preparation affords an agreeable and effective way of administering petroleum for its laxative properties. The digestive action of the diastase present has therapeutic advantages also.

ANTIFORMIN.

(Messrs. Sutton and Phillips, The Factory, Stowmarket.)

Antiformin possesses both powerful detergent and antiseptic properties. It is a carefully balanced combination of hypochlorite of soda with sodium hydrate. We found present 4·12 per cent. of available chlorine and 7·6 per cent. of alkali. Its dissolving action on various organic matters, dirt and grease is of great assistance in the work of disinfection, while chlorine, of course, is a powerful germicide. Besides of use in the refinements of antiseptic practice as for sterilising surgical instruments and application in diluted form in skin diseases, it is useful for household cleansing. Recent studies have shown how very powerful the hypochlorites are as germicides in the sterilisation of water, so that very dilute solutions are effective. These considerations suggest application in surgical and medical practice more than has hitherto been the case. Antiformin has already been used with advantage in the bacteriological diagnosis of tuberculosis.

CREAMWORT.

(The Glenn Company, Garwick, Isle of Man.)

This is a preparation of milk soured by a special lactic acid ferment. Lactic acid bacillus therapy has been on its trial for some time, and no doubt in many cases gives good results, but it is important that the sour milk should contain no adventitious matters or organisms. Creamwort reminds us of the curdled milk preparation called yaghourt which is consumed so largely in Turkey and in Bulgaria. It has a strong but pleasant acid flavour. Our analysis gave the following results: Moisture, 89·53 per cent.; mineral matter, 0·76 per cent.; fat, 3·00 per cent.; milk sugar, 2·30 per cent.; lactic acid, 1·97 per cent.; and casein, 2·44 per cent. It thus shows the composition of sour milk. It possesses both nutritive and therapeutic properties, the lactic acid development being useful in intestinal auto-intoxication.

MINERAL WATERS.

(Richard Davis, 20, Maddox-street, Regent-street, W.)

It is reported by this well-known manufacturer of mineral waters that the demand for these beverages has grown considerably since the war, which has led him to pay still further attention to their preparation. He has submitted to us samples of dry ginger ale, lemonade, tonic water, and ginger-beer. We have examined these and find they are well made, and in no case was any trace of objectionable preservatives or metallic contamination found. They are quite wholesome beverages and we are glad to note that the amount of sugar present is not excessive. The ginger ale may well be described as dry, and it has a quite delicate flavour. It was free from sulphurous acid. The stone ginger-beer is also a well-made beverage. Being fermented it contained a small amount of alcohol equal to 0·66 per cent. by volume, which is well below the limit laid down by the excise.

THE LANCET.

LONDON: SATURDAY, MAY 1, 1915.

Nerves and War: The Mental Treatment Bill.

In the campaigns of the last century, and notably in the Franco-Prussian War of 1870, the strain of battle and the arduous conditions of active service were recognised as prolific sources of nervous and mental disorder. The development of military art since then, characterised as it has been by great and rapid progress in the discovery of increasingly powerful explosives and in their utilisation for destructive ends, has added very materially to the nerve-shattering influences of war, while with the larger scale of operations and the employment of huge conscript armies the range of these influences has been enormously multiplied. As a result the problem of dealing with cases of nervous and mental disorder in soldiers on active service has become at the present day a matter of serious difficulty and of considerable practical importance.

The procedure which has been followed hitherto in regard to cases of this sort occurring in the Expeditionary Force is very similar to that adopted in ordinary surgical and medical practice in the field. Specialists of acknowledged standing in the profession are attached to the large hospitals overseas, and are called in to examine and report on all cases of traumatic neurasthenia and the milder psychoses. Under their instructions the patients are sent home to one of two clearing hospitals—viz., the Royal Victoria Hospital, Netley, and the 4th London Territorial Hospital at Denmark Hill, where special neurological sections have been organised, and they are thence transferred according to the exigencies of the individual case, either to one of the London hospitals for nervous diseases or to one of the institutions taken over by the military authorities for use as hospitals. The fact that several of these latter institutions were formerly lunatic asylums has given rise in some quarters to a feeling of anxiety lest the soldier patients sent there for treatment are being relegated to the category of the insane and may suffer in after life from the prejudice which the vulgar unfortunately entertain against the victim of mental disease. This feeling has found expression in a memorial to Lord Kitchener suggesting that arrangements should be made for treating soldiers suffering from nervous shock in specially organised departments in connexion with general hospitals. It is possible, if we may judge from the terms of the memorial, that some supporters of this view have been influenced by a needless suspicion of the lunacy expert, and have quite erroneously supposed that the alienist goes about seeking whom he may certify; but that qualifying consideration should not prevent us from recognising that the feeling voiced in the memorial is in itself a natural and proper feeling, and one, moreover, which we venture to think is shared by the large majority of alienist physicians. For years past alienists have been striving to impress on the public mind the urgent need of bringing the treatment of insanity into closer association with general medicine by the establishment of psychiatric clinics in connexion with the universities and the larger hospitals, and they have confidently maintained that by making proper provision in this way for the early treatment of incipient and undeveloped mental disorder it would be possible to save many patients who under the present system drift into incurable insanity.

A statement of this view was formulated shortly after the outbreak of the war by one of the members of the Board of Control, Dr. C. H. Bond, in his introductory address at the opening of the winter session at the Middlesex Hospital[1]; and it is hardly necessary to recall that the Maudsley Hospital, which will perpetuate the name and the generosity of one of the foremost living alienists, was designed by its founder to embody the same ideal. The advocates, therefore, of what may be termed the abortive treatment of the nervous disorders occurring in our soldiers under the strain of war can count on the sympathy and coöperation of the specialists in psychiatry; and this the more certainly because the cases which we are considering are peculiarly amenable to this mode of treatment. It is, in fact, well known that a very large proportion of the psychoses of soldiers on active service are of an eminently recoverable character. Dr. P. M. Awtokratow, who, as the medical officer at the head of the organisation for the care of the insane in the Russian army during the Manchurian campaign, had exceptional opportunities for studying this question, found[2] that most of the cases of epileptic psychosis and neurasthenic insanity—the commonest forms of mental disorder occurring amongst the Russian soldiers—recovered completely under appropriate treatment within three or four weeks. Presumably the same good results may be looked for in the majority of the confusional and neurasthenic cases sent back from the battlefields of Flanders, so that it would be obviously undesirable to apply to such cases the methods of certification and legal restraint that have to be used in dealing with graver and less curable forms of insanity. And as these invalid soldiers are subject to military discipline, the difficulties which unfortunately compel the resort to certification in similar cases occurring in civil life do not arise; in the army patients suffering from these incipient and unconfirmed disorders can be kept in hospital as long as competent medical opinion considers necessary without putting upon them the stigma of legal insanity. And here we may remark in passing that a modification of the law, giving to the physician in charge a similar power of limited control, is a necessary preliminary to the establishment of psychiatric clinics for the treatment of incipient mental and nervous troubles in civilian patients. The critics of our present lunacy system would do great service if they would devote some part of their energies to promoting this reform.

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[1] The Lancet, Oct. 17th, 1914, p. 935.

[2] Die Geisteskranken im Russischen Heere während des Japanischen Krieges, Allgemeine Zeitschrift für Psychiatrie, 1907.

In the meantime a Bill, the Mental Treatment Bill, has been introduced into the House of Commons by Mr. CECIL HARMSWORTH, the Under Secretary for Home Affairs, the purport, briefly stated, being "to facilitate the early treatment of mental disorder of recent origin arising from wounds, shock, and other causes." Its text has now been issued, and a Memorandum attached to it gives a brief summary of the law and the changes which it is proposed to effect in it. The object of the Bill is to secure the proper treatment of such cases by making the law less rigid than at present. It removes the necessity for formal certification in the case of persons suffering from mental breakdown of recent origin and arising from wounds, shock, &c. In this respect it assimilates the English law to the law which has been in force in Scotland for 50 years and which has worked satisfactorily [Lunacy (Scotland) Act, 1866, section 13]. This Bill will enable a man who, in the service of his country, has suffered a nervous breakdown, to accept the treatment without being certified, but only for a period not exceeding six months and under conditions which should provide security against misuse. The measure will be criticised as annulling the protection of the Lunacy Act by providing for detention in cases that are not properly certifiable, and as introducing unnecessary legislation, because there is nothing in the Lunacy Act which precludes medical care being bestowed upon such cases in homes or institutions where, moreover, invalid soldiers can be required to remain by military authority; but the medical advisers of the War Office are, of course, alive, we must believe, to the special conditions of the problem, and we feel that they should be trusted to ensure that soldiers suffering from nervous shock will be treated by the best possible methods and with the help of all the resources of medical science. We do not think that there is ground for fearing that resort will be had without real and urgent necessity to any procedure likely to be prejudicial to the patient's prospects in after life. It is right, however, that public attention should be drawn to this side of the situation; the interest awakened thereby should do much to promote a more sympathetic attitude towards the general problem of the treatment of the insane, and should materially assist the efforts of those alienist physicians who are striving to break down the artificial and mischievous barriers which, in popular belief, and to a regrettable extent even in medical practice, separate insanity from other conditions of disease.

The Treatment of the Sick and Wounded in the War.

SIR ALMROTH WRIGHT'S address to the Royal Society of Medicine closes with an outspoken statement on the organisation of medical service at the war, in which he makes the distinct point that in the existing circumstances medical opinion at large should carry great weight. He points out that military medical activities fall under three heads—treatment in the field, sanitation in the field, and treatment in military hospitals, where the differentiation between base hospitals and clearing hospitals cannot in this enormous struggle be maintained with any rigidity. The energies and organisation of the Royal Army Medical Corps are all employed, and at full stretch, in coping with the exigencies arising under the first two heads of the classification—and how well, with what courage, resourcefulness, and adaptability they have met those exigencies the world bears witness—leaving the treatment of the sick and wounded in the large hospitals mainly in the hands of civilian physicians and surgeons who have met the call upon them with enthusiasm. This state of affairs must continue, and the question which Sir ALMROTH WRIGHT puts is whether the medical service of the hospitals as a whole would not gain by official pronouncements in respect of procedure—whether the patients would not benefit by treatment according to some accepted principles, accepted, of course, after anxious investigation by recognised authorities; and whether the physicians and surgeons concerned would not welcome general guidance, seeing that their individual experiences must vary so much.

The classification of medical work at the war into the three headings of sanitation, treatment in the field, and treatment in hospitals, is perfectly sound, and it is a fact that the third section of labour, the treatment of the sick and wounded in the military hospitals, has largely devolved upon civilian practitioners, who are justly proud of their responsibilities. That being so, it is the duty of us all to consider whether the methods under which this work is being done are those that are calculated to extract from the members of the medical profession engaged the fullest value to their country in her need. And an expression of opinion on that subject from the medical profession at large will not be considered by the Army Medical Service as intrusive; for that service has been, from the moment that the scope of the task before the country could be envisaged, ready in every way to rely upon the best coöperation of national medicine. It is not a question of civilians criticising army orders; rather it is a question of the medical profession deliberating whether their share in maintaining an army with which to fight the Germans would not be more fruitful if those of them now serving as commissioned officers were put in receipt of more orders. Of course, all the treatment of the wounded in the military hospitals has the appearance of military organisation, but, as a matter of fact, the routine pursued must be very much that which, tested by experience and hallowed by custom, is pursued in big civilian hospitals. Now in civilian hospitals, and still more in general practice, which follows the lessons learned in the hospitals, work tends to conform to a pattern. Its variety is great, but the points between which variation occurs are at small distance from each other. There are answers which it is recognised should be given to most large questions of diagnosis or treatment which arise; and every step can be taken with authority, either because the men who move are in a position to know, or because the course to be pursued has been pursued previously by such tried men. How has this position been arrived at? We all know that it is the outcome of years of intelligent routine in a sphere whose limits are bounded by the circumstances and possibilities of civil life, a sphere which has been enlarged as our recognition of the facts of pathology has widened, and which has contracted as medical science has been able to combat and remove certain diseases from among us, or to alter the frequency of their occurrence. In the civil hospitals by careful study of the conditions within their sphere a line of treatment has been arrived at. Not a hard-and-fast line, but a line of common consent, admitting of much fluctuation and ready to alter its situation upon good cause being shown. But the mark of authority is there, and can be constantly maintained by the watching of cases remaining long under the eyes of intelligent observers, and by the collation of opinions derived from others, where the medical press has played, and plays, a great part. In our military hospitals the whole situation is entirely different. The injuries which are found most commonly in their wards are for the most part extremely rare in civil practice. The circumstances in which these injuries have been received are no less novel, for the size of the armies engaged in itself introduces problems, while the advances made in the manufacture of weapons of destruction have endowed projectile wounds with features which have never come within the experience of those employed in treating them. The medical men who are serving in the military hospitals can meet the calls of civilian practice of all sorts, but they are, in their present posts, without the assistance of strong precedents, and without much opportunity of benefiting by the opinions of their colleagues. In the new conditions there are no recorded experiences of value, and few of the cases remain for a sufficiently long time under treatment in one hospital for the medical officer to know if his measures have taken good effect. The service in the military hospitals is weakened by a want of central direction which is all the more needed that peripheral efforts are individual, and have never obtained the force of collective actions.

Our sick and wounded are receiving extraordinarily good attention in the military hospitals, and it is far from our intention to be alarming. One injury does to a great extent imitate another, and some of the best informed exponents of our art are with the Expeditionary Forces. Again, adaptability to the new work has already distinguished a great many of the civilian doctors engaged, while the absence of disease has been notable and the percentage of recovery from serious injury quite gratifying. But none the less we think that Sir ALMROTH WRIGHT has made out a case for the introduction of central guidance in questions of treatment, premising, of course, that any authority set up should be entirely subordinated to the Director-General of the Army Medical Service. The principle has to some extent been recognised by that service, for we published last week a Memorandum on the treatment of bacterial infections of projectile wounds by Sir ALMROTH WRIGHT and three other distinguished civilians, serving in a consultative medical capacity with the Expeditionary Forces, in which these leading surgeons and pathologists give a synopsis of their experience in connexion with the wounds in this war.[1] This synopsis they have supplemented by setting out the chief data furnished by a bacteriological study of the wounds, and they have laid down certain broad maxims of treatment for the instruction of those who have not seen the conditions in the present war, or who have seen only an early or a late phase in the history of the wounds. Moreover, it is promised that this Memorandum will be followed up, as soon as certain researches are completed, by similar information on the employment of antiseptics and vaccines respectively. It is certain that all who have the charge of the sick and wounded in the war must welcome such publications warmly; the question only remaining, whether a step further should not be taken and a regular authority constituted to promote the utilisation of such first-hand knowledge, and to facilitate the adoption, as general measures of treatment, of the lessons so conveyed. We see no inconvenience in the proposal from the point of view that scientific freedom would be interfered with. The dictator in medicine is impossible, but organisation is not tyranny, and leadership based on first-hand experience is not tyranny either. It must be taken for granted that no new machinery introduced would alter in the least the paramount position of the Director-General of the Army Medical Service; and it could only work with the approval of the consulting medical officers, who have been chosen as fully representative of British medical science. But we feel that Sir ALMROTH WRIGHT has made out a good case for the institution of an Advisory Committee charged with the duty of synopsising the clinical experience of the war, being themselves at the seat of war and prepared to take full responsibility for their recommendations. Such a body would instruct and reinforce those responsible for the treatment of the sick and wounded in something the way that past teaching, opportunity for consultation, and familiarity with the conditions support the practitioner in civilian practice. Moreover, such a committee would lead directly to international coöperation. It would enable the good work done by the British medical profession to be more readily available for our Allies, and would give a basis upon which the British procedure could be compared with and modified in accordance with the scientific procedure of our Allies.

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[1] Memorandum on the Treatment of the Bacterial Infections of Projectile Wounds, by Colonels F. F. Burghard, Sir W. B. Leishman, F.R.S., Sir B. Moynihan, and Sir A. E. Wright, F.R.S.

Annotations.

"Ne quid nimis."

MEDICAL CERTIFICATES AND THE EXPLOITATION OF THE MEDICAL PROFESSION.

Sir John Moore read a paper recently before the Section of State Medicine of the Royal Academy of Medicine in Ireland, in which he drew attention to what he regarded as a serious professional grievance. He referred to the fact that the demand made upon the time, patience, and responsibility of registered medical practitioners in respect of medical certification for State or personal purposes was always made with the offer of a nominal fee, or, as in the case of the medical certificate of the cause of death, with no fee at all. Sir John Moore gave as an extreme instance of the situation the ordinary certificate of death which all medical men are compelled to furnish under penalty. This certificate, he pointed out, is solely for the use of the registrar, given in order that the Registrar-General may be able to compile reliable statistics. For giving this certificate, which is primarily for the use of the Government, medical men are paid no fee, and, we may add, in agreement with Sir John Moore's view, that the circumstances in which such certificates can be given are highly unsatisfactory. Sir John Moore then referred to the arrangements for medical certificates under the Infectious Diseases Notification Act, the Public Health Amendment Act, the Tuberculosis Prevention (Ireland) Act, and the National Health Insurance Act, and criticised with particularity the various circumstances. Under the Public Health Amendment Act the medical officer of health is required to give certificates free of charge to school children who have recently recovered from infectious fevers; under the Tuberculosis Prevention (Ireland) Act a medical man must notify cases under penalty, and for doing this he will get a fee of 2*s.* 6*d.* if the case has not already been notified by someone else; and under the National Health Insurance Scheme certification is allowed to be quite unsatisfactory, as may be gathered from the Report of the Departmental Committee on Sickness Benefit Claims under the National Insurance, July 24th, 1914. The committee then expressed the opinion "that in view of the difficulties with regard to certification, it is necessary that there should be established as soon as possible a system of medical referees." The Chancellor of the Exchequer did not provide for remuneration out of State funds for the medical profession who would be called upon to certify under the Bill: he made provision for the Approved Societies and for the insured, but the medical profession did not enter into his calculations. Sir John Moore claimed that the State can be seen to place but a small, an insignificant, financial value on medical certificates—that, in fact, it "exploits" the medical profession on the matter of certification. We have often in THE LANCET called attention to the demands made by the general public on the medical profession for certificates of good or bad health for insufficient fees or with no fee at all, and we find ourselves wholly on Sir John Moore's side. The public does not understand the justice of the medical claim for adequate remuneration for certificates; a false estimate has been established in the mind of the public as to the value of the medical certificate, and we fear that it will be a long time before the position of scientific medicine in this connexion will be appreciated.

MINISTRIES OF PUBLIC HEALTH.

CONGRESS after congress dealing with public health questions has met in England and on the continent. During the course of such proceedings convincing arguments have been adduced and emphatic resolutions passed advocating the institution of a Ministry of Public Health. Nevertheless, nothing of the sort has been done in any of the countries concerned. Will the war now bring about what all these assemblies, some of them of great importance, have failed to accomplish? There are rumours to that effect. With regard to France, 20 years ago Dr. Pierre Bonnier studied and discussed a scheme for a Ministry of Public Health with his party colleagues, M. Millerand and M. Jules Guesde. (It is significant that to-day the former is Minister of War and the latter a Member of the French Government.) M. Vaillant, the *député* who, when an exile here qualified as a Member of the Royal College of Surgeons of England, drew up a scheme more recently which was submitted to the Chamber of Deputies for the creation of a Ministry of Public Health. Nothing was done then, but the signs are now propitious, and if the reform comes it may come all in a moment. At congresses innumerable, and on many public occasions, more was said for years against absinthe than has ever been said in favour of a Ministry of Public Health. To-day the sale of absinthe has been abolished with a stroke of the pen. Russia, which abolished vodka with similar ease and expedition, is also stated to be contemplating the possibility of calling into existence a Ministry of Public Health, and from Roumania we hear of the same intention being manifested. The swift compliance with the demand for a Public Health Ministry in France would have its origin in the circumstances of the war. The mobilisation of the ambulance services in France was not at first as satisfactory as might be desired. Centralisation with expert knowledge would have done better. And if to-day we hear that proposals have once more been brought forward in France to instal a new Minister of Public Health it is in order to have someone who will be in authority over civil State medicine and give official help to military medicine, Red Cross work, and national and international public health services. Thus it may happen that the stress due to the war will bring into existence in France, and with but little difficulty or resistance, what has been talked about in vain for so many years. If a Ministry of Public Health is instituted in France, it may not be long before this country follows suit.

PELVIC ABSCESS AFTER THE USE OF THE FOWLER POSITION.

THE Fowler position has proved a valuable advance in the treatment of cases of suppurative peritonitis. In the *New York Medical Journal* of Feb. 13th Dr. H. B. Delatour has called attention to a complication which may follow its adoption after operations for appendicitis. While in the majority of cases the septic material which gravitates into the pelvis drains away, in a few cases pelvic abscess results. His attention was first called to this complication by the following case. A young man underwent operation for acute appendicitis. The abdomen contained a large quantity of purulent serum. The appendix was perforated and gangrenous about the middle. After its removal as much of the fluid as was in the wound was sponged away and a cigarette drain was introduced into the pelvis. The wound was partially closed and the patient placed in the Fowler position. He was recovering satisfactorily when, at the end of a week, he began to complain of pain in the left iliac region and the temperature rose. Two days later an incision was made on the left side, and an abscess in the left iliac fossa was opened and drained. The temperature fell, but not to normal. He then suffered from diarrhœa and pain on defæcation, which he attributed to "piles." When seen by Dr. Delatour he had an almost continuous desire to defæcate, but passed only scanty motions containing much mucus. Examination showed no hæmorrhoids or evidence of ischio-rectal abscess. Introduction of the finger was painful, and just beyond the prostate a mass was discovered bulging into the rectum. This felt so like a distended bladder that this organ was emptied before proceeding further. The mass was still present and gave a sense of fluctuation. Under ether the sphincter was dilated and a speculum introduced. The bulging anterior wall of the rectum was cleansed with sponges, and a longitudinal incision led to the escape of 3 oz. of pus. A drainage-tube was introduced and brought out through the anus. On the fourth day it was removed, as all drainage had ceased. After the evacuation of the pus the temperature became normal and the general condition began to improve. Two weeks later recovery was complete. This complication does not appear to be very rare, for since the occurrence of this case three years ago Dr. Delatour has observed six similar cases. They were all treated in the same way except one. In this, as the abscess was small and far from the anus, aspiration was tried. Two ounces of pus were withdrawn and recovery followed. Dr. Delatour concludes that if after operation for appendicitis the wound looks healthy and careful examination shows no undrained pockets and yet there is pyrexia a rectal examination should be made, especially if there is frequent defæcation with tenesmus and discharge of mucus. If an abscess is present he recommends drainage by the rectum. There appears to be little danger of infection from this source. To wait for the abscess to be reached easily from the front would be to lose valuable time, and the incision through the abdominal wall would leave a weak point for the development of a hernia, as drainage must be continued for some time. While aspiration may prove satisfactory in some cases Dr. Delatour recommends incision whenever possible. Incidentally, he remarks that a large percentage of cases reported as general suppurative peritonitis are not so. In many cases of acute appendicitis he has found the abdomen full of serum clouded with lymph. For some reason an unusual amount of serum has been exuded without changes in the peritoneum which could be recognised as inflammatory. In such cases it has been his custom for years if the appendix, though gangrenous, is not perforated to close the abdomen without irrigation or drainage, and the results have justified the procedure. The success of many cases of this kind appears to have been credited to postural treatment.

MEASURES FOR DISINFECTION.

THE Local Government Board for Scotland has recently issued a circular to public health authorities requesting information as to the measures adopted in the district of the local authority for the disinfection of clothing and dwellings. With the circular a form of inquiry is enclosed to be filled up by the medical officer of health or the sanitary inspector. Section A in this form relates to wearing apparel, bedclothes, and bedding infected by persons suffering from the ordinary infectious diseases, as typhoid fever, diphtheria, scarlet fever, measles, whooping-cough, and chicken-pox. The questions in this section refer to whether it is the practice to remove to one or more central stations any or all of such articles, and if so whether the disinfection method is by steam, gaseous or liquid disinfectants. In the case of the disinfection being carried out at home information is asked as to the disinfectant employed and the duration of the exposure of the infected articles to the disinfectant, together with the measures adopted for the disinfection of the dwelling apart from clothing. Section B refers to wearing apparel, bedclothes, and so forth infected by patients suffering from tuberculosis. The questions asked as to procedure are much the same as in Section A, but any difference in regard to treatment of pulmonary and non-pulmonary tuberculosis is requested to be notified. The issue of this circular would appear to mean that there is a desire to place methods of disinfection on one effective level. A system of uniformity in this matter is certainly needed, and it is to be hoped that the information asked for will be supplied in order that standard and effective methods may be universalised.

THE DEFICIT IN THE INSURANCE DRUG FUNDS

OWING to a shortage in the amount allotted for the payment for dispensing and medicines for insured persons panel chemists in many districts have suffered both in 1913 and 1914, but especially in the latter year, the uncomfortable experience of being confronted with the prospect of having their bills discounted more or less heavily. But the situation has now been considerably relieved by a statement made by Mr. E. S. Montagu, chairman of the National Insurance Joint Committee, to a deputation from the Pharmaceutical Society which waited upon him with regard to this and related topics. He said he had come to the conclusion that a case had been made out for some relief to be given to chemists whose bills had suffered a heavy discount, and he therefore proposed to make available, for the purpose of *ex gratia* payments on this account, the special drug fund, for which a sum of £60,000 had been granted by Parliament in 1913 and 1914. These payments, he said, must not be regarded as a precedent, and were intended solely to meet the abnormal conditions which had arisen in the first two years of the operation of medical benefit. This sum will be far short of sufficient to enable the whole of the deficits to be made up, but those panel chemists whose bills have been heavily discounted are nevertheless to be congratulated on the fact that through the instrumentality of the council of the Pharmaceutical Society they will receive a substantial proportion of money which there seemed reason to believe was irrecoverable. It is to be hoped that this unbusiness-like system of discounting bills will be discontinued, and that some means will be devised of putting the pharmaceutical finances of the Insurance Act on some equitable basis which conforms with established notions of business transactions. Mr. Montagu also outlined an arrangement by the operation of which panel chemists will not be kept waiting so long for the payment of their bills.

"LEARNING FROM OUR ALLIES."

IN another column Dr. Dundas Grant draws attention to the collection of special classes of cases in certain military hospitals of France. These hospitals constitute centres to which cases from far separated regions are brought together, and we agree with his suggestion that those called upon to deal with these special forms of injury may derive a considerable amount of information by visiting such centres. Evidently the plastic surgery of the face is richly illustrated in such "services" as those of Dr. Morestin at the Hospital of the Val-de-Grâce in Paris and of Dr. Moure and Dr. Dubreuilh at Talence, near Bordeaux. The stomatological department at Bordeaux appeared to Dr. Dundas Grant to afford great advantages for the study of the methods of repairing damage to the masticatory apparatus and impressed him with the immense importance of the dental surgeon's chair in the treatment of injuries to the jaws occurring in warfare. We hope that a regular system of interchange of experiences between the military medical services of the Allies will soon be instituted; there is every indication that both the present needs of the wounded and the progress of medicine in the future would be helped by such a pooling of the results of actual work.

DIAPHRAGMATIC HERNIA OF THE STOMACH AND OMENTUM ON THE RIGHT SIDE.

A CASE which is probably unique has been reported by Dr. Kakels and Dr. Basch in the *New York Medical Journal* of March 13th. It was found at the operation which was performed for the relief of the symptoms that the whole of the stomach except its pyloric end, together with the whole of the great omentum, was in the thoracic cavity on the right side, outside of and behind the pericardium. The hernial protrusion, which was a true hernia, the wall of the sac consisting of peritoneum and pleura, had passed upwards through an opening high up in the diaphragm on the left side and behind the liver near the left crus between the pars vertebralis and pars costalis. The entire hand could be introduced into the opening and the sac itself extended as high up as the second rib. The stomach itself was enormously enlarged, being three times its natural size and near its pyloric end there was a distinct constriction. The patient succumbed soon after the operation, at which it was found quite impossible to close the hernial opening. The patient was a man, aged 54, and nothing in the history suggested the presence of a diaphragmatic hernia. He had not been subject to unusual strain, and up to two years ago had had good health. Then he had an attack of sudden and gradually increasing pain across the upper abdomen with a feeling of abdominal distension and a condition of mild shock. The further course of the case resembled that of chronic gastric or duodenal ulcer, whilst in the later stages the loss of appetite, weight, and strength suggested malignant disease. There occurred also periodic vomiting of large amounts of gastric secretion. Test meals in this case showed the possibility of an erroneous conclusion being arrived at as to the gastric motility, for in this case only 30 c.c. total contents were removed, suggesting abnormally rapid motility and emptying, but really due to the withdrawal of contents from only one sac of the hour-glass stomach. The X rays were of assistance, and the hour-glass condition was recognised, and the radiologist also suggested the possibility of a diaphragmatic hernia. Some of the plates are reproduced in this paper, and in them may be seen the pushing down of the liver a few minutes after the bismuth meal, and the "oblique white line" of the stomach can be seen on the right side extending upwards and inwards from the eighth rib to the pericardium.

THE CRITICISMS OF CORONERS.

THERE is a tendency constantly to be observed among those occupying judicial positions to criticise members of the medical profession severely who exercise their undoubted discretion as to the acceptance or refusal of patients for treatment in accordance with the circumstances in which such treatment is asked for. This is particularly observable in the case of coroners, who not infrequently hear a story of how a medical practitioner was asked to come at once to the deceased person on whom an inquest is being held, but who declined to do so. If the medical man received the call, and was not physically prevented from answering it, there is a tendency to consider him *ipso facto* convicted of brutality. A refusal to attend a patient who afterwards dies causes grief and resentment among the bereaved relatives, and it is the duty of a coroner to satisfy himself that there is no evidence of neglect to lay before the jury in fixing responsibility for the death in question. Beyond this, however, his duty cannot lie, except that he should be careful to protect a professional man against groundless attacks by excited and naturally prejudiced witnesses. There is no excuse for a coroner who, in the circumstances indicated, lends an ear to complaints which he should know are unjustifiable; he should not give them even a qualified support. But such would appear to have been the line taken by Dr. S. I. Oddie at Wandsworth recently when holding an inquest on the body of a child named Alfred Day, who died from pneumonia, and whom Dr. J. Tod Thyne admittedly was asked more than once to attend during the last 24 hours of life without complying with the request to do so. On the face of this story there may have been a case of hardship suffered by the mother of the child, in spite of the fact that when the medical man was sent for Alfred Day was ill beyond hope of recovery; but, at the same time, the mother was at liberty to summon another medical man. Going below the surface, however, in order to inquire why Dr. Tod Thyne did not attend, the coroner was informed by him that he had treated the child before; that he knew that it was in very bad health, but did not know that there was immediate danger; and that when he was first summoned he had not had his clothes off for 42 hours. To quote his own expression in explaining to the coroner, he was "done up." At this time, moreover, a Sunday evening, his surgery was full of patients waiting to see him and he promised to visit the case early next day. In the night he was, however, called to a confinement which kept him up till 7 A.M., and on Monday morning, when he was once more sent for, his surgery was again full. The coroner made various suggestions: he thought that the medical man might engage an assistant; he said that he might have left his patients waiting in his surgery in order to relieve the mother's anxiety, adding that the patients in the surgery "could not have been more ill than a dying child," a statement which presumed knowledge on Dr. Tod Thyne's part that the child was, in fact, dying. Dr. Oddie concluded by saying "the mother felt very cross when she could not get the doctor who knew the child, and I am inclined to agree with her." This appears to us to be unjust and uncalled-for criticism, and, moreover, to be concerned with a subject outside the scope of the coroner's inquiry. All the circumstances of a medical man's professional practice, his own interest no less than the calls of humanity, demand that he should do his utmost to attend all the patients in need of his aid whenever it is possible to do so, and that he should neglect none. The conditions under which illness occurs do not, however, allow of anything but a general organisation of the work to be got through, such as, for example, a practice of being at certain times of the day in his surgery and at certain other times out upon his rounds. It is not possible for any man to be in two places at once, but the alternative was suggested by Dr. Oddie that Dr. Tod Thyne should engage an assistant. Whether a medical man will take an assistant or not is entirely his own affair, and at the present time assistants are difficult, or impossible, to obtain. Besides, even with an assistant, a rush of work or the clashing of two serious cases which demand simultaneous attention may lead to complaints on the part of someone. We think Dr. Oddie does not recognise the difficulties of general practice, and possibly he is not aware of the practical impossibility of obtaining an assistant.

DENTAL CARIES.

Two papers on dental caries of more than passing interest have recently appeared, the one by Dr. H. P. Pickerill[1] and the other by Dr. H. Ewan Waller.[2] Dr. Pickerill's paper is written in the form of a report to the Sixth International Dental Congress and, although the greater part summarises well-known facts in connexion with the disease, there are sections recounting valuable researches he has undertaken. He is particularly insistent on the disastrous effects of alkalies, and states that they have a depressant action on salivary secretion. The continuous dosage of alkalies he maintains produces alimentary stasis and therefore toxæmia, the latter in its turn producing secondary (nervous) salivary stasis by the direct action of endotoxins, and in this way oral stasis is set up and predisposition to caries brought about. With regard to the question of foodstuffs he gives many facts to show that food prepared in a soft state plays but little part in the incidence of caries, but he thinks that an active factor is the fine subdivision of the foodstuffs. The resistance of the tooth tissue he regards as an important thing, and shows that there is a marked difference in the enamel of the teeth of Maoris, who are comparatively immune to caries, and of Europeans, who are liable to the disease. On the question of heredity as an etiological factor in dental caries he refers to the well-known experiments of Brown-Séquard on the division of nerve tracts in guinea-pigs. The guinea-pigs, Brown-Séquard claimed, produced offspring with lesions similar to those produced in the parents by section of the nerves. Dr. Pickerill remarks: "If these views are correct, the bearing on the occurrence of dental caries is this: that at increasingly early ages, long before marriage, adolescents are, either by disease or by operations, suffering section or destruction of the nerves supplying trophic function to the teeth. If, then, Brown-Séquard was right, we must expect the offspring to reproduce these organs (the teeth) in a degenerate or diminished condition—possibly in a condition of lowered resistance to the attacks of caries." We presume that Dr. Pickerill feels that the question of heredity remains quite obscure. Dr. Waller's paper is devoted to the question of the influence of insufficiency of the thyroid gland upon dental caries. He considers that it is unwarrantable to assume that the disease is merely a question of diet, and in his opinion the presence or absence of caries is due to the alkalinity of the saliva, and this is intimately associated with the effect of the thyroid gland on calcium metabolism. The increased thyroid activity, he considers, either causes increased elimination of calcium or perhaps by interaction with other ductless glands prevents the proper assimilation of calcium, and so, by leading to defective alkalinity of the saliva, permits the occurrence of dental caries. The increased thyroid activity he attributes to brain work. Both these papers are interesting but inconclusive.

THE King has granted Dr. George Ernest Morrison, Political Adviser to the President of the Republic of China, authority to wear the Insignia of the First Class of the Order of the Excellent Crop, which decoration has been conferred upon him by the President in recognition of valuable services.

BRITISH NEOSALVARSAN.—Messrs. Burroughs Wellcome and Co. have obtained a licence from the Board of Trade for the manufacture of neosalvasan. After passing biological tests under arrangements approved by the Board of Trade, this product is now being issued under the name of "Neokharsivan" brand neosalvarsan. For "Neokharsivan" there is claimed the same advantages over salvarsan that are claimed for neosalvarsan of German manufacture, and it is employed in the same manner and dosage. There are six strengths, 0·15 grm., 0·3 grm., 0·45 grm., 0·6 grm., 0·75 grm., and 0·9 grm., each dose being issued in a hermetically sealed tube. The supplies are for the moment limited, but the manufacturers state that they will soon be able to cope with the demand.

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[1] British Dental Journal, April 1st and 15th.

[2] Proceedings of the Royal Society of Medicine, Odontological Section, vol. viii., No. 2.

FACIAL PLASTIC SURGERY, LARYNGOLOGY, AND STOMATOLOGY, IN FRENCH MILITARY HOSPITALS.

Impressions de Voyage.

BY J. DUNDAS GRANT, M.A., M.D. EDIN., F.R.C.S. ENG.,

AURIST AND LARYNGOLOGIST TO KING GEORGE HOSPITAL, LORD KNUTSFORD'S SPECIAL HOSPITAL FOR OFFICERS, ETC.; LATE MAJOR R.A.M.C., POST-OFFICE RIFLES VOLUNTEERS.

HAVING recently had occasion to go to Paris and Bordeaux I was afforded the opportunity, by the courtesy of some of my medical friends, of visiting certain of the military hospitals. I wished mainly to acquaint myself with the results of wounds and other influences of warfare on the throat, nose, and ear. At the Hospital of the Val-de-Grâce my friend Dr. Luc kindly introduced me to the "service" of M. Morestin for the treatment of wounds of the nose and face in general. This was to me so striking that I described it to several of my surgical friends on my return, and my superficial report seemed to them so interesting and in some ways so new that I venture to draw attention to it in these few lines. I have no doubt that the same kind of work may be carried out in our home military hospitals, but I scarcely think that any approach to such an accumulation of material of the kind at any one place could be found there. Apparently the bulk of such cases are drafted into this "special" department from a very extensive part of France. In any case there were wards full of soldiers with ghastly disfigurements of the face resulting from rifle or shrapnel bullets or the fragments of shells or grenades. These seem to have been more frequent since the fighting has been mainly carried on in the trenches, where naturally the head and face are the parts of the body most likely to be exposed.

Every possible disfigurement was seen in multiple, but some of the most characteristic were those involving a driving in of the bridge of the nose, leaving the tip turned up "en lorgnon," and complete occlusion of the deeper nasal passages. The associated lacerations produced with this an aspect of the utmost repulsiveness. In these cases M. Morestin adopted a method of operating in stages, which seemed to me to present some original features. The first step is the detachment of the remainder of the nose from above downwards by a transverse horseshoe incision, extending nearly to the naso-labial folds on each side, forming a flap attached below and containing the tip of the nose and anterior nares. This leaves raw surfaces round a somewhat piriform orifice inside which the remains of the septum and nasal contents may be traced in a mass of débris and cicatricial tissue. The passages of the nose are cleared and the open cavity stuffed with gauze to prevent readhesion. In a few days the gauze is replaced by indiarubber tubes or bands with leaden weights attached so as to keep the flap down. Another step is to implant in the forehead a portion of cartilage from a false rib, and when this has taken root a new nose is formed in the classical manner by means of a flap from the forehead in which is included the piece of cartilage. Patients with this operation in all its various stages were to be seen in these wards or walking about in the grounds. Naturally the plastic surgery of the face in every form is carried out, but the cases I have referred to seemed to be of special interest.

At Talence, near Bordeaux, there is a large hospital which forms a centre to which "special" cases are sent. Here nearly one-third of the beds are apportioned to the department of oto-rhino-laryngology for the 18th Region, under Dr. E. J. Moure, the specialist who is so well known as the adviser of the King of Spain. His work, of course, overflows far beyond the ordinary routine of civil practice, and includes a large amount of plastic surgery as well as the removal of portions of projectiles or the treatment of their effects. He makes frequent use of the extra access afforded by surgical detachment and elevation of the ala nasi for the clearance of passages through the nose and the replacement of distorted alæ. A specially interesting part of his work is the treatment of traumatic stenoses of the larynx by the operation of laryngostomy. This is more readily carried out in the adult than in the child, and has been found of great value. The plastic surgery of the face is also illustrated at Talence by a large number of cases under the care of Dr. Dubreuilh.

Among the most striking types of cases to be seen here are those of extensive destruction of the lower jaw. In these we have the disfigurement accompanied by masticatory, articulatory, and salivary trouble; the sufferers unable to take solid food, incapable of intelligible utterance, dribbling and disfigured, present a most woeful appearance. The extraordinary feature is that in spite of all they seem full of the patience, cheerfulness, and buoyancy in the midst of their trouble, which is characteristic of the French soldier. The cheering side of this depressing picture to the medical visitor is the remarkable resourcefulness and keenness of the dental surgeons in the "Service de Stomatologie." I am informed that the science and practice of dentistry are practised with exceptional ardour in the south of France. At all events the Service of Stomatology is a scene of the greatest activity. Most cases of fractured jaw are X rayed, photographed, modelled in plaster, drawn and painted by workers in military uniform, who seem to give of their best, with all their hearts, in return for their exemption from the sterner work of the field. The main idea is, of course, to patch up the mandible, but in such a way as to ensure coaptation with the maxilla and secure the "bite." There is nothing the military stomatologist seems to resent more than union attempted by means of a wire suture. A cast is taken of the upper jaw and then of the lower one as a whole or often in parts. Metal collars are adapted round the teeth and by their means screw apparatuses are attached for pressing the fragments asunder if they override, or elastics for drawing an outwardly displaced fragment in towards the middle line. Inclined planes ("buttoirs") formed of gilded metal are often used with the same object. The ultimate adaptation of a prothesis with artificial teeth is the main end from the physiological point of view and no doubt it is often attained. The benefit from the æsthetic aspect is also unquestionable. Our own dental surgeons are not at all likely to be behindhand in this class of work, but the hasty glance of the stomatological activity exercised at Talence impressed me with the importance of the dentist's work and of the lofty position it should hold in our scheme of care for the wounded, which I had not hitherto realised. It is only to be desired that every encouragement should be given to our stomatological colleagues on the part of the authorities, fellow surgeons, and money providers. They will require much room, much mechanical assistance, and much material, including metal both precious and other.

The enormous number of French in the field has, of course, provided an amount of material such as we—perhaps happily—are unable to command; and *the agmination of cases of special character in "centres"* allows of a concentrated study of their nature and requirements such as we can scarcely obtain at home. I cannot help thinking that a visit to one or more of the "centres" in France in a somewhat less casual way than my recent one was made, would be of interest and possibly of profit to those who have to deal with the wounded man for decoration as well as repair.

Cavendish-square, W.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Water-supply of Londonderry.

IT is satisfactory to be able to report that Londonderry is at last waking up to the importance of obtaining a really adequate water-supply. At a meeting of the corporation, held on April 20th, the city surveyor submitted a report, in which he recommended the adoption of a scheme for bringing water from Banagher Glen, a place that is the junction of three rivers, which here unite to form the Owenrigh, a tributary of the River Roe. Of the 6000 acres proposed to be utilised, there are only 174 acres of arable and grass land, and of this only 100 acres are under cultivation, the remaining 5826 acres being all mountain upland. The quality of the water and the geological conditions have been reported as most satisfactory, and the quantity of the water would be quadruple that of the present supply. The elevation is sufficient to send this water into the present reservoirs, and it is estimated that the scheme (including filtration and an aqueduct across the river Foyle) would cost about £209,000. It has been arranged that the corporation of Londonderry in a body shall inspect the site.

The Alcohol Question.

Some of the Belfast papers have published references to an interesting article by the late Dr. Thomas Andrews, F.R.S.—the distinguished chemist who did such original work in the liquefaction of gases, and who for many years was Vice-President of Queen's College, Belfast. The paper is called Suggestions for Checking the Hurtful Use of Alcoholic Beverages by the Working Classes, and was contributed to the annual meeting of the Social Science Association, which met in Belfast in 1867. In this communication Dr. Andrews recommended that no house should be licensed as a public-house for the sale of alcoholic beverages unless it be provided with ample appliances for cooking and serving food; that the licence should be withdrawn if it be found that these appliances are not made use of and that the public-house is devoted solely to the sale of stimulants; and that no licensed publican should be allowed to sell, or keep in store, any liquor containing more than 17 per cent. of alcohol.

The King Edward Memorial in Belfast.

The Executive Committee decided unanimously, at a meeting on April 23rd, to request the Lord Mayor of Belfast, who presided, to invite the Lord Lieutenant of Ireland to open the King Edward memorial buildings at the Royal Victoria Hospital, Belfast, during his coming visit next month. Owing to the war the special laboratories (X ray, vaccine-therapy, and bio-chemical) are not yet fully equipped, and it was agreed to defer their inauguration until a future date.

April 26th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Rice Flour in Bread-Making.

WITH a view to augmenting the national supply of breadstuffs, Dr. Maurel has brought to the notice of the Académie de Médecine the use of a mixture of 20 per cent. of rice flour with 80 per cent. of wheat flour. The mixture is free from hygienic objections and gives a bread presenting nutritive qualities equivalent to those of all-wheat flour. The bread thus prepared is of good appearance and taste and it is rather less in price. Another important advantage lies in the fact that France would thus find in the supplies of rice from Cochin China all that is necessary to balance any future deficiency in the wheat-supply. It should be further noted that scientific methods make it possible easily to determine the proportion of rice flour in the mixture, thus establishing a check on fraud. The country would find a great economic gain in adopting this use of rice, for a million tons of rice flour at 27 francs the metric quintal would cost France only 270 millions of francs, whilst a million tons of wheat flour would cost 420 millions. All that would be necessary would be that the Government should authorise the mixture, so that it would not be penalised as fraudulent.

Rapid Cicatrisation of Atonic Wounds by Biokinetic Measures and Intermittent Dressings.

Wounds occurring in war, if without bone lesions, ordinarily heal very quickly under established methods of treatment, such as dressings of iodine, oxygenated or boiled water, or dry gauze, each method having its special indications and advantages. There are, however, certain kinds of wounds which resist all these methods of treatment. M. François Debat recommends that in such cases every antiseptic of whatever kind should be dispensed with. At first a soft dressing should be applied of fine gauze slightly moistened with saline solution and covered with a layer of cotton-wool. The wound, he says, should be exposed daily to the air for a period of exposure progressively increasing in proportion to the decrease of any oozing. On the first day it may be exposed for two hours, the duration ordinarily increasing by an hour a day. When there is no longer any oozing the saline solution may be replaced by the application of a thick paste of zinc oxide or "innotyol." Every hour the muscles underlying the wound should be exercised for five minutes, the limb being raised. Meanwhile the patient should keep his bed if the lesion is in the lower extremities; if in the arm he should wear it in a sling. Daily massage is also advised. This very simple method is said to bring about prompt cicatrisation of some obstinate wounds.

April 26th.

PRESENTATION TO LIEUTENANT-COLONEL E. J. JEROME (T.F.).—Lieutenant-Colonel Jerome was recently presented with a massive silver inscribed rose bowl as a mark of esteem on the occasion of his retiring from the 5th Devon and Cornwall Light Infantry (T.F.).

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

ANNUAL CONGRESS.

THE annual Congress of the Ophthalmological Society of the United Kingdom was held on Thursday, Friday, and Saturday, April 22nd to 24th, under the presidency of Mr. F. RICHARDSON CROSS, of Bristol. The discussions took place at the headquarters of the Royal Society of Medicine, and the clinical meeting at the Royal London Ophthalmic Hospital, City-road. There were two set discussions, one upon Ophthalmic Injuries in Warfare, introduced by Mr. W. H. H. JESSOP; and one on Detachment of the Retinæ, introduced by Mr. M. S. MAYOU. Some of the other contributions were of considerable interest.

Mr. CHARLES WRAY contributed a paper on

The Diagnosis and Treatment of Bony Tumours of the Orbit.

With regard to their removal, he contended that the figures of Herschfeld placed the subject in its true perspective. They showed that the mortality in cases of sinus growths—frontal, ethmoidal, and sphenoidal—was 48·2, 80, and 100 per cent. respectively; whilst the post-operative mortality was 13·6, 12·7, and 33 per cent. The two main methods of diagnosis were by palpation and the use of Roentgen rays. As examination by the fingers was too limited, he advised the use of a thin flexible spatula 10 mm. wide and 2 mm. thick at the ends. This, pressed on the skin under the supraorbital notch, passed 15 mm. under the lid, and *viâ* the fornix 33 mm.—i.e., within 12 or 13 mm. of the sphenoidal fissure. The measurements at the lower orbital margin were 12 and 16 mm. respectively, while at the inner and outer canthus the distance reached was 15 and 21, and 11 and 22 mm.; and as the usual distance from the margin of the orbit to the rectal spine was 45 mm. it was possible thus to investigate half the outer wall of the orbit. In the living subject it was desirable to administer morphia for an hour and deep injections of novocaine ten minutes before beginning the examination. With regard to the operation, he laid stress on the importance of dissecting up the superjacent membrane if present, and the periosteum, so as to shut off as efficiently as possible the field of operation from the contents of the orbit. Having tested the hardness of the growth, an attempt should be made to test the strength of the attachment to the bone, as slight leverage might snap the pedicle. If this did not occur and the tumour was cancellous it should be removed piecemeal, so as to discover its relation to the orbital wall. If originating from a subjacent sinus, and especially if hour-glass shaped, the bone should be cut away so as to allow of easy removal in the safest direction. Two important landmarks were the inner canthus (over the anterior extremity of the middle turbinated) and the anterior ethmoidal foramen (giving the level of the cribriform plate). Frontal sinus cases were the most frequent, and usually presented at the upper and inner part of the orbit. No operation should be undertaken in the presence of material alteration in the roof of the orbit as revealed by X rays. Ivory exostoses could not be removed piecemeal. As in the cancellous variety, gentle leverage was in order, and in the event of failure sufficient of the orbital wall should be cut away to permit of removal in the safest direction. A clue to the size and location of the growth was obtained by radiography and the use of a strong needle.

Mr. W. D. HARMER read a paper on

The Intranasal Treatment of Dacryocystitis.

As nasal inflammations and abnormalities rarely cause dacryocystitis, treatment of such conditions was generally disappointing. Intranasal operations on the tear sac or duct became popular in 1912, after the operations of West, Polyak, and Yankauer. A modified West operation had been preferred. Of 14 cases treated, 6 have been cured, 3 improved, 4 not improved and not traced. Operations were easy to perform and could be repeated if necessary. Dacryocystotomy was probably the best treatment for dacryocystitis.

Captain A. W. ORMOND read a paper on

Injuries to the Eye in Warfare.

He recounted three cases of traumatic amblyopia following the explosion of shells. The first was of a soldier who was in the retreat from Mons. He recovered entirely after complete rest and "feeding up." A second case was associated with an error of refraction which had led to the idea that recovery had not taken place; while the third had not yet regained his former sight, though wounded more than three months ago. It was pointed out how difficult these cases were to diagnose, and how important it was to take the psychology of the men into consideration. He described the frequency of "explosion injuries" peculiar to the war, the result of hand grenades, shrapnel, or high-velocity shells. Numerous cases had occurred in which, as the result of a general explosion, small fragments of metal or dirt had been forced through the tunics of the eye. These had sometimes been overlooked, and later on, the man having complained of pain and inflammation, iritis had been correctly diagnosed, but the possibility of a foreign body being in the eye had not been realised, and sympathetic trouble might have occurred. He related two cases in which the speedy removal of the eye prevented sympathetic trouble supervening. With regard to the vexed question of removing an eye containing a foreign body, he recommended that no general dogmatic statement should be made on this debatable point, as each case must be separately considered. He deprecated relying solely on the findings of X ray examination, because in several cases the foreign body was not discovered until a second or third radiogram had been taken, and sometimes not even then. The history, the nature of the inflammation if any, and the amount of vision should be taken into consideration when making a decision. Short notes were given of 28 blinded soldiers, most of whom were now at St. Dunstan's, Regent's Park. Thirteen of them have no perception of light at all, and the sight of those with vision ranged from mere perception of light to ability to count fingers in one part of their field. Eighteen were the victims of bullet wounds, which for the most part traversed the front part of the head from side to side; 4 were wounded by shrapnel, 1 by a hand-grenade, and the others by explosion, the exact nature of which the men did not know. One, however, was due to a bullet hitting the magazine of the man's own rifle, which exploded in his face. Captain Ormond said that several of the men when looked at appeared absolutely fit, often with both eyes intact, the scars of entrance and exit wounds being almost impossible to locate.

Mr. CYRIL H. WALKER read a paper describing

Cure of Spontaneous Detachment of Retina by Multiple Scleral Puncture.

The patient, aged 39, had sudden loss of sight in part of the right field in September, 1901. Two days after the occurrence there was a large detachment above, the summit of which was estimated as +12 D. He had 4·5 of myopia. He was ordered complete rest in bed for a week, and then was allowed up for an hour a day The detachment had now swung round to the lower part of the eye, with corresponding change in the field; vision had improved. A further fortnight of partial rest again showed improvement, and he was allowed out; but the sight rapidly got worse and the detachment increased. Improvement followed more rest in bed, but it was only temporary; in December the vision had fallen to 6/60. He was ordered to bed again, and five scleral punctures with a discission needle were made 10 mm. from the lower border of the cornea. The retina was pierced at each puncture, and the needle was rotated 90° after the last puncture to let out some of the subretinal fluid under the conjunctiva. On Dec. 21st the sight was immensely improved, and he resumed full work on March 4th, 1902, with vision 6/6 with glasses and a normal field. The condition had been maintained ever since, and the only sign of detachment was the presence of a little pigment below in the choroid.

Mr. M. S. MAYOU read a paper on a case of

Retinitis Pigmentosa treated by Trephining,

the improvement following which had been maintained for four and a half months, in the hope that some light might be thrown on the etiology of a little understood disease. In this condition anything which improved the retinal circulation would temporarily benefit vision—such as amyl nitrate or paracentesis of the anterior chamber. Doyne had shown that extraction of the lens was followed by immense improvement in vision due, it was considered, to the fact that the patient was always in a condition of semi-daylight owing to the cataract, so that the retina did not receive sufficient stimulation. Mr. Mayou, while not denying this, thought that the lowering of the intraocular tension, with the consequent flushing of retinal vessels, and the filtration of fluid through the scar, might be an additional factor, possibly the most important one, in the good result. He (Mr. Mayou) thought trephining would result in the retinal vessels being flushed with blood, and that the subsequent leakage might lead to a more rapid excretion of fluid from the eye and drain away any toxic products which might be causing local vascular sclerosis. The patient was a female, aged 17, who for two years had complained of night-blindness. Grandfather, father, one paternal aunt, and one brother were all affected with the same disease. The four sisters of the patient were not night-blind. She showed marked pigmentation of the periphery, the discs being slightly grey in colour and the vessels of practically normal size. The lenses were clear. When first examined the fields were contracted to a 10° circle on both sides. On Nov. 13th last and again on Dec. 1st paracentesis of the left eye was performed, and on each occasion there was distinct improvement in the fields. On Dec. 8th trephining was done under general anæsthesia. On removing the disc of sclera there was a very free prolapse of iris, and it was slightly caught in the wound; recovery was otherwise uneventful. A week later the field on this side had practically reverted to normal, and she could walk about freely in a darkened room. Improvement was maintained to the present date. On covering the unoperated eye she could see well at night time, but if both eyes were open she was still somewhat night-blind. He could not advance any explanation of this. The improvement could not be expected to last very long, but it might continue for a length of time which justified the operation in selected cases.

Mr. F. A. JULER read notes of a case of

Papilloma Removed from the Upper Canaliculus.

The tumour came away, after slitting the canaliculus, quite easily; there was no apparent pedicle. It measured 10 by 4·5 mm., and in structure was a papilloma with stratified epithelium.

Dr. GEORGE MACKAY (Edinburgh) read a short note on a case of

Lymphangioma of the Orbit with Hæmorrhages.

The patient was seen first in 1906, being then 15 months old. Paracentesis and, later, excision so far as practicable having failed to eradicate the growth from the apex of the orbit, X ray treatment, given by Dr. Hope Fowler, had been employed, and with much benefit. Owing to the irregularity in the patient's attendances proptosis had been allowed to recur at intervals of one to three years, but had always yielded to further X ray applications. The cure now appeared to be complete and vision and movements were unimpaired.

Choroid and Retina of the Fruit-Bat.

Mr. GEORGE COATS demonstrated a peculiarity of structure in the choroid of the fruit-bat which was first observed by Lindsay Johnson. Instead of being smooth the surface is covered with innumerable conical prominences, each containing a central vessel which projects from the apex in the form of a long capillary loop. The outer surface of the retina has a similar serrated sectional outline. The condition is not found in any of the insectivorous bats, whose eyes in other respects also are inferior in development. It had been suggested that the structure was a device for the nourishment of the retina, in which central retinal vessels are absent in the bat. But many animals—e.g., the elephant and rhinoceros—which have a much thicker and more extensive retina have also no, or only rudimentary, central vessels; yet their retinæ obtain sufficient nourishment from a flat choroid without the sacrifice of form vision which the arrangement in the fruit-bat necessarily entails. According to another hypothesis the structure is an accommodative mechanism, images of distant objects falling on the most anterior plane of the serrations; of near objects on the most posterior. Evidence was adduced to show that the range of accommodation so obtained could not be great, and that, inasmuch as the formation of a clear image was impossible, it could not be very useful. The most probable explanation was that the condition was a device to enable the eye to make the best possible use of low illuminations. Evidently the serrated contour of the retina must greatly increase the superficies of the sensitive film and augment the number of visual elements concentrated within a given area. In other respects also—its relatively large size and the structure of the retina—the eye of the fruit-bat is characteristically adapted to a nocturnal habit.

Parasites in Eyelid and Anterior Chamber in Animals.

Mr. COATS also demonstrated an Encysted Nematode Parasite in the Eyelid of the Mouse. Professor A. E. Shipley considered it to be the Ollulanus tricuspis, the adult form of which occurs in the alimentary canal of the cat.

Lieutenant-Colonel W. G. PRIDMORE, I.M.S., and Mr. COATS demonstrated a Filaria from the Anterior Chamber of the Horse, probably an immature male of Filaria equina.

Discussion on Ophthalmic Injuries in Warfare.

Mr. WALTER H. H. JESSOP, in opening the discussion on this subject, dealt chiefly with the cases of injury in the present war seen by him at St. Bartholomew's and No. 1 Base Hospitals. He said that the steel or cupro-nickel mantle of the bullet was often chipped, and a fragment might perforate the cornea or embed itself in its substance. The initial high velocity of the bullet might be lost by ricocheting from a stone, and he had found that wounds so produced were more serious than direct ones. As most of the fighting was in trenches there was a greater proportion than usual of head and face injuries, as they were the parts most exposed to the enemy. There had been a few instances of spent bullets entering the orbit and remaining there without bursting the eyeball; they were probably ricochet. Such cases often showed intraocular hæmorrhages, choroido-retinal changes, and detachment of retina, generally complete. The most distressing ocular injuries, usually caused by enfilading fire, were those in which the bullet passed transversely through both orbits. There must already have been at least 50 such cases. If it was found that a wound had been made in the orbital roof the brain substance would fill it up; and as sepsis could not be prevented it was better to leave well alone. When the orbit and eyeball were much damaged it was better to foment the wound and keep it as clean as possible with sodium chloride solution, delaying removal of the eyeball until the conditions were less inflamed, always having in mind the risk of sympathetic ophthalmitis if the other eye were a good one. In the case of both eyes being destroyed, it was better to wait until the danger of sepsis was over, or it was much reduced, before removing the destroyed eyeballs, owing to the fear of meningitis. He described an operation devised by Mr. W. T. Lister to avoid the opening of the nerve sheath. Eyelid injuries he found to be very common, and almost always accompanied by injuries of the eyeball. Usually the lids became very œdematous, hence sutures should not be inserted into them. Conjunctivitis did not seem to have been prevalent in this war. In the Franco-German War 55 per cent. of cases of eyeball injury developed sympathetic ophthalmitis; in the American Civil War the percentage was 16·14. In the present war he had not seen or heard of a single case of the kind, which he attributed to the great care exercised in diagnosis and treatment, and especially the early enucleation of a ruptured globe. He had only seen one case of bullet wound implicating ocular nerves, and that he described; it was a ricochet bullet. The bullet and shrapnel wounds of the skull vault were generally depressed, and there was a great frequency of papillœdema in such cases; the appearances were those due to pressure. Papillœdema was probably present in all cases of vault injuries, with increased intracranial pressure; it was not usually seen when this pressure remained normal. Fractures of the skull near the occipital lobes were often accompanied by hemianopsia. At the beginning of the war there were many cases of complete blindness following severe explosions; but sight returned at different periods up to a week. The condition in these cases was always bilateral. Some cases were deaf. In rarer cases the patient was dumb. Three of the men had extreme blepharospasm, so that they could not open their eyes for days. The initial shock in these cases was loss of consciousness, which, passing off, left loss of sight, deafness, or even loss of speech, all temporary.

Mr. W. T. **LISTER** said the outstanding features of the ophthalmic injuries in the present war were their severity and the impossibility, in most cases, of employing conservative surgery. Still, there was a great deal of work to be done. He grouped the cases into the following classes: contusions, wounds, cases with foreign body in the eye, functional cases, and head cases. These he considered seriatim. In concussion cases, if the bullet did not go through the orbit the fundus showed no concussion changes. Ruptures of the choroid were fairly common, and they might be starlike or arranged in definite groups. The rest of the retina showed some pallor due to *commotio retinæ*. Cases of penetration of the eye by small foreign bodies formed a very unsatisfactory group to deal with. Many of the particles did not give a sensible X ray shadow, and even if they did many of the fragments were non-magnetic. Two factors increased the poor outlook in operation: (1) the frequent presence of more foreign bodies than had been diagnosed; (2) the friability of the foreign bodies, so that they broke off when caught in the forceps. It was difficult to know what to do in the case of a foreign body in the eye when the sight remained useful. He believed that even if an eye contained a foreign body, if there were no prolapse or entanglement of the uvea or lens capsule, the risk of sympathetic ophthalmitis was *nil*. Though the eye would probably degenerate, useful vision might persist for a considerable time. If signs of irritation did not abate, he would remove the eye. Foreign bodies in the cornea were often very troublesome to remove. When the foreign body was deeply embedded, he found a Beer's knife most useful. Mr. Lister went on to discuss in some detail functional cases, and quoted some striking instances. In head injuries, papillœdema occurred in slightly over 50 per cent. of the cases, but two-thirds of these had merely blurring or slight swelling. The greatest swelling occurred in association with cerebellar abscess. He did not attach much diagnostic importance to hæmorrhages or exudations; and the presence of papillœdema did not point to the immediate necessity of operation; it was increasing swelling which was the significant factor. He regarded cases of occipital injury as of very great interest, as a study of them might cast important light on the cortical representation of the fundus. The facts arrived at by Dr. Gordon Holmes and himself, from the examination of a number of cases, were: (1) when the lesion occurred over the occipital cortex of only one side, the result was either hemianopsia, or homonymous quadrantic defect on the opposite side; (2) when the bullet passed through both occipital lobes, there was at first complete blindness, but in several cases this gradually cleared centripetally after an interval varying from hours to days, leaving a central scotoma. Mr. Lister regretted that his observations were not fuller, but reminded his hearers that cases were after a short time sent over to England.

The discussion was continued by Mr. **TREACHER COLLINS**, Mr. P. H. **ADAMS**, Mr. G. H. **POOLEY** (Sheffield), Mr. L. V. **CARGILL**, Mr. **MACKAY**, Mr. R. R. **CRUISE**, Mr. F. **THOMAS**, Mr. A. L. **WHITEHEAD** (Leeds), Mr. **PRIESTLEY SMITH** (Birmingham), Mr. M. M. **TOWNSEND**, Colonel **ELLIOTT**, Mr. J. **GRAY CLEGG**, Professor **LANDOLT**, and the **PRESIDENT**.

At this siting the Nettleship medal and prize were presented to Mr. Treacher Collins for his valuable work in the specialty.

(*To be continued.*)

ROYAL ABERDEEN HOSPITAL FOR SICK CHILDREN.—The thirty-eighth annual report (1914) states that 2945 cases were treated during the year, 888 as in-patients and 2057 as out-patients. Of these, 687 were discharged as cured, 111 died, and 45 were still in the wards at the close of the year. The remainder were removed as unfit, &c. The expenditure exceeded the income by £529 12*s.* 8½*d.* The sum of £980 19*s.* 5*d.* had been received in legacies during the year. The income for the year is slightly augmented, the city collections showing an increase of £41, the collection from the county parishes being increased by £253 17*s.* 11*d.* as compared with 1913. The building fund for the new hospital had increased during the year by £1773 2*s.* 4*d.* The total amount to the credit of the fund was now £12,498 1*s.* 3*d.* This sum, together with what was promised and payable, £8313 10*s.*, was still far short of the estimated cost of the new hospital.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned have been granted temporary commissions as Surgeons:—Dallas Scott Falconer, Walter Ethard Goss, William Sloane Lynd, and John Scott Kennedy.

The following appointments have been notified:—Fleet-Surgeon: R. S. Bernard to the *Victory*. Staff-Surgeon: W. P. Hingston to the *Vivid*, additional. Surgeons: H. E. R. Stephens to the *Lion*; J. A. Russell-Cargill (temporary) to the *Victory*, additional, for R.N. Division, Crystal Palace; R. A. Rankine to the *Pembroke*; and K. H. Hole to the *Thames*. Temporary Surgeons: T. D. Power to the *Zealandia*; E. W. Todd to the *St. George*; and N. N. Wade to the *Ganges*, additional, for Shotley, R.N. Sick Quarters.

ROYAL ARMY MEDICAL CORPS.

The undermentioned to be temporary Captains:—Dated April 1st: Thomas Henry Rickard Crowle and Gordon Taylor.

The undermentioned to be temporary Lieutenants: Dated Oct. 24th, 1914: Alfred John Andrew. Dated Feb. 7th: Harold Victor Lamb. Dated March 2nd: Arthur John Wilson Compton. Dated March 26th: Newman Smith, John Bowman Hunter, and Arnold Renshaw. Dated March 28th: Gwilym Rhys Pennant, Thomas William David, and Guy William Parry. Dated March 29th: George William FitzHenry and Meilor Bridgman. Dated March 30th: Percy Wilkes Leopold Camps. Dated April 1st: Ian Mount Grant, John Oscar Thomas, Benjamin Theodore Saunders, Guy Berners Nicholson, Arthur Russel Rendle, George Donaldson Fairley, Thomas Baxter Carlyon, Edward Maurice Hime, William Henry Sheffield, Duncan Wood, Frederick William Woods, John Keay, Kenneth Harrison Alloa Kellie, William Gilbertson, Ernest Clarkson Bourdas, Ernest Percy Satchell, Henry St. Arnaud Agate, Howell Wood Barnes, John Henry Joseph Davys, John Paton, John Moffat Logie, James Norman Wheeler, Karl Frederick Sonntag, Hans Anthony Conrad Swertz, John Bell Walker, Harold John de Brent, Arthur Dashwood Howard, Percy Kitchen, Philip Heywood Hadfield, John Craven Glen, David Gillies, Arthur Emery, James Browning Alexander, Reginald Williams, Charles Edward Bashall, Charles Allen Robinson, John Patrick Howe, Herbert Henry Folker, Leslie Herbert Walsh, Frank Bryan, Charles Calthorp de Burgh Daly, Benjamin Hilton Leigh, Sidney Campbell Dyke, William Newton Parker, Thomas William Kelly, William Benjamin Heywood, Robert Alexander Flynn, William Beck, Eric Reginald Delme Maconochie, Charles John Gibson, Edward Ferdinand Greene, Ernest Saxton, Sidney Herbert Hall, Frederick Guy Bullmore, Hubert Redmayne Sedgwick, Ernest Allan, John Donald Gunn, David Charteris Graham, Robert Linton Ritchie, Emanuel Mary Joseph O'Farrell, William Charles Watson Glenny, James Alexander Gentle, John Marchant Fry, John Cecil Rix, George Warwick Deeping, William Hutchison, and John Wylie. Dated April 2nd: Robert McCheyne Paterson, Walter Haward, Bernard Score Browne, Charles Butler, Robert Moore, Andrew Ferguson Horn, Robert Denman, John Desmond Gimlette, Ernest Richard Stone, Charles Ewart Dashwood, William Douglas Wilkins, and William Harvey. Dated April 3rd: Harold Bourne Taylor, Henry Brooke Shepherd, William Bertram Lawrence, James Craig, Andrew Hardie MacKenzie, Philip Augustine McCarthy, William Arnison Slater, and Harry Grey. Dated April 5th: Edwin William Sidney Martin. Dated April 6th: Donald Fisher, William John Francis Symons, Richard Albert Banbury, John Connell, James Benjamin Hoghton Davson, Thomas Johnston, Ambrose Pode Yonge, William John Hill, Arthur George Southcombe, Wilfred Vedal Robinson, John Henry Sheldon, and Evan John Goronwy Jones.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned to be Lieutenants (on probation):—Frederick Ernest Feilden and Neville Hood Linzee, ex-Cadet of the Officers Training Corps.

TERRITORIAL FORCE.

Army Medical Services.

Lieutenant-Colonel Ernest O. Wright, from Deputy Assistant Director of Medical Services, Home Counties Division, to be Assistant Director of Medical Services, West Riding Division, with the rank of Colonel.

Royal Army Medical Corps.

London Mounted Brigade Field Ambulance: Private Ronald Douglas Stuart Mar, Lord Cardross (late Lieutenant, Scots Guards), to be Transport Officer, with the honorary rank of Lieutenant.

1st London (City of London) Field Ambulance: Captain Andrew Elliot to be temporary Major. Lieutenant Arthur D. J. B. Williams to be Captain, and to remain seconded.

2nd Highland Field Ambulance: Benjamin James Alcock to be Lieutenant.

2nd London (City of London) Field Ambulance: Arthur Hardwicke Platt to be Lieutenant.

2nd Northumbrian Field Ambulance: John McDonald Nicoll (late Major, 7th Battalion, The Durham Light Infantry), to be Major (temporary).

3rd Welsh Field Ambulance: John Evans (late Captain, 6th Battalion, The Royal Welsh Fusiliers) to be Major (temporary). John William Dale to be Lieutenant.

1st Eastern General Hospital: Lieutenant Ffrangcon Roberts, from 1st East Anglian Field Ambulance, to be Lieutenant.

4th London General Hospital: George Arthur Ewart to be Captain, whose services will be available on mobilisation. Captain William Hunter is seconded.

1st Northern General Hospital: Stuart McDonald (late Captain, Unattached List for the Territorial Force), to be Captain, whose services will be available on mobilisation.

1st Scottish General Hospital: Major Henry McI. W. Gray is seconded. Captain Middleton Connon, from Sanitary Service, to be Captain, whose services will be available on mobilisation.

1st Southern General Hospital: Bertram Arthur Lloyd to be Captain, whose services will be available on mobilisation.

3rd Western General Hospital: To be Lieutenants: Lieutenant Ivor J. Davies, from 2nd Welsh Field Ambulance, and Thomas Rufus Bowen.

2nd London Sanitary Company: To be Lieutenants: Herbert Beeney and Frederick John James Ney.

East Anglian Casualty Clearing Station: Frederick William Lewis to be Lieutenant.

Welsh Border Mounted Brigade Field Ambulance: John Arthur Eyton-Jones (late Surgeon-Lieutenant, 1st Volunteer Battalion, Royal Welsh Fusiliers) to be Captain (temporary).

2nd East Lancashire Field Ambulance: William Clegg-Newton to be Lieutenant.

2nd London Casualty Clearing Station: Athelstan Jasper Blaxland to be Captain (temporary).

1st Southern General Hospital: Captain Frank D. Marsh is seconded.

2nd Southern General Hospital: Major James Swain is seconded.

3rd East Lancashire Field Ambulance: William Calverley to be Lieutenant.

1st Northern General Hospital: Major Robert A. Bolam to be temporary Lieutenant-Colonel.

2nd Northern General Hospital: Major Sir Berkeley G. A. Moynihan is seconded.

2nd London (City of London) General Hospital:—The undermentioned officers are seconded: Major Sir Frederick S. Eve, Captain Sir William A. Lane, Bart., Captain Sir Bertrand E. Dawson, K.C.V.O., M.D.

3rd London General Hospital: Major Sir John R. Bradford, K.C.M.G., C.B., is seconded. Ernest Nevile Keys-Wells to be Captain, whose services will be available on mobilisation.

2nd North Midland Field Ambulance: Major John C. S. Burkitt, from Attached to Units other than Medical Units, to be Major (temporary).

1st Northern General Hospital: Captain George Hall to be Major, and to be seconded.

3rd Northern General Hospital: James Clark to be Captain, whose services will be available on mobilisation.

2nd Western General Hospital: Charles Paget Lapage (late Captain, Unattached List for the Territorial Force), to be Captain.

Northumbrian Casualty Clearing Station: William Albert Wetwan (late Major, 5th Battalion, Alexandra, Princess of Wales's Own (Yorkshire Regiment)) to be Major (temporary).

The undermentioned to be Lieutenants: Robert Wilkie Smith, Frederick Septimus Walker, Fred Phillips, and Stanley McCoull.

Attached to Units other than Medical Units.—To be Majors: Surgeon-Captain George Symers Mill, from the 4th Battalion, The King's Own (Yorkshire Light Infantry), Captain Henry W. Williams, and Captain John O. Summerhayes. To be Captains: Richard Timmis Turner (late Captain, 7th Battalion, The Cheshire Regiment), Lieutenant Horsley Drummond and Captain Arthur L. Yates (from the 4th Northern General Hospital). To be Lieutenants: John Macquarrie, Lieutenant Alistair Robertson Grant (from 2nd Highland Field Ambulance), Lieutenant Maurice U. Wilson (from the 5th London Field Ambulance), and Edward Stanley Johnson.

Territorial Force Reserve.

Royal Army Medical Corps.

Lieutenant-Colonel Arthur Lloyd Jones (late 3rd Welsh Field Ambulance) to be Lieutenant-Colonel.

Surgeon-General Robert W. S. Lyons, Indian Medical Service, has been appointed an Honorary Physician to the King, vice Brigade Surgeon-Lieutenant-Colonel (Honorary Colonel) D. D. Cunningham, C.I.E., deceased.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8809 births and 6063 deaths were registered during the week ended Saturday, April 24th. The annual rate of mortality in these towns, which had been 19·8, 19·9, and 19·0 per 1000 in the three preceding weeks, further declined in the week under notice to 17·4 per 1000 of their aggregate population, estimated at 18,134,239 persons at the middle of last year. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 19·6, against a corresponding rate of 20·6 per 1000 in London. Among the several towns the death-rate last week ranged from 6·8 in Barnsley, 7·0 in Darlington, 7·8 in Wallasey, 8·6 in Ilford, and 9·5 in Ealing, to 23·9 in Middlesbrough, 24·0 in Northampton, 24·5 in Hastings, 25·2 in Sunderland, and 28·1 in Dudley.

The 6063 deaths from all causes were 555 fewer than in the previous week, and included 689 which were referred to the principal epidemic diseases, against numbers declining from 826 to 736 in the three preceding weeks. Of these 689 deaths, 389 resulted from measles, 149 from whooping-cough, 65 from infantile diarrhœal diseases, 49 from diphtheria, 29 from scarlet fever, and 8 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·0, against 2·1 per 1000 in the previous week. The deaths attributed to measles, which had been 495, 452, and 426 in the three preceding weeks, further fell to 389 last week, and caused the highest annual death-rates of 3·4 in Sheffield, 4·4 in Stockton-on-Tees, 4·5 in Middlesbrough, 4·9 in West Hartlepool, 5·3 in West Bromwich, 6·6 in Coventry, 8·9 in Walsall, and 9·2 in Northampton. The deaths referred to whooping-cough, which had been 157, 167, and 151 in the three preceding weeks, fell to 149 last week, and included 52 in London, 13 in Liverpool, 9 in Leeds, 6 in Wigan, 5 in Hull, and 4 each in Stoke-on-Trent and Bradford. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 77, 67, and 63 in the three preceding weeks, were 65 last week, of which 18 occurred in London, and 4 each in Liverpool and Manchester. The deaths attributed to diphtheria, which had been 69, 49, and 55 in the three preceding weeks, fell to 49 last week; 15 deaths were recorded in London, 4 in Birmingham, and 3 each in West Ham, Northampton, Liverpool, and Leeds. The deaths referred to scarlet fever, which had been 16, 25, and 28 in the three preceding weeks, were 29 last week, and included 13 in London, and 2 each in Leyton, Liverpool, and Leeds. The fatal cases of enteric fever, which had been 12, 7, and 11 in the three preceding weeks, fell to 8 last week, of which 2 occurred in London.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily declined from 5036 to 2422 in the 21 preceding weeks, had further decreased to 2369 on Saturday last; 259 new cases were admitted during the week, against 253, 275, and 263 in the three preceding weeks. These hospitals also contained on Saturday last 1251 cases of diphtheria, 377 of measles, 64 of enteric fever, and 14 of whooping-cough, but not one of small-pox. The 1619 deaths from all causes in London were 141 fewer than in the previous week, and corresponded to an annual death-rate of 18·7 per 1000. The deaths referred to diseases of the respiratory system, which had been 475, 466, and 469 in the three preceding weeks, fell to 392 in the week under notice, but were 134 in excess of the number registered in the corresponding week of last year. The deaths from influenza numbered 27, against 45, 46, and 39 in the three preceding weeks.

Of the 6063 deaths from all causes in the 96 towns 199 resulted from various forms of violence and 437 were the subject of coroners' inquests, while 1723 occurred in public institutions. The causes of 46, or 0·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Hull, Newcastle-on-Tyne, and in 62 other smaller towns. Of the 46 uncertified causes, 9 were registered in Birmingham, 3 each in Stoke-on-Trent, Dudley, and South Shields, and 2 each in London, Lincoln, Liverpool, and Southport.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,345,500 persons at the middle of this year, 1303 births and 938 deaths were registered during the week ended Saturday, April 17th. The annual rate of mortality in these towns, which had been 21·1, 22·1, and 20·8 per 1000 in the three preceding weeks, rose to 20·9 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged

22·4, against 19·6 per 1000 in the large English towns. Among the several towns the death-rate in the week under review ranged from 6·1 in Falkirk, 11·3 in Motherwell, and 14·7 in Perth, to 22·1 in Glasgow, 23·4 in Greenock, and 24·3 in Edinburgh.

The 938 deaths from all causes were 4 in excess of the number in the previous week, and included 133 which were referred to the principal epidemic diseases, against 181 and 154 in the two preceding weeks. Of these 133 deaths, 90 resulted from whooping-cough, 19 from measles, 10 from infantile diarrhœal diseases, and 7 each from scarlet fever and diphtheria, but not one from enteric fever or from small-pox. The annual death-rate from these diseases was equal to 3·0, against 2·1 per 1000 in the large English towns. The deaths attributed to whooping-cough, which had been 81, 104, and 75 in the three preceding weeks, rose to 90 and included 47 in Glasgow, 16 in Edinburgh, 13 in Dundee, 4 in Greenock and 3 in Aberdeen. The deaths referred to measles, which had been 21, 45, and 41 in the three preceding weeks, fell to 19, and comprised 16 in Glasgow, 2 in Aberdeen, and 1 in Clydebank. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had increased from 5 to 18 in the five preceding weeks, fell to 10, of which 7 were registered in Glasgow. The deaths attributed to scarlet fever, which had been 12, 11, and 6 in the three preceding weeks, were 7 in the week under notice, and included 3 in Glasgow. The fatal cases of diphtheria, which had been 7, 6, and 11 in the three preceding weeks, fell to 7, of which 5 occurred in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 186, 162, and 182 in the three preceding weeks, slightly fell to 178 in the week under notice, but were 58 in excess of the number recorded in the corresponding week of last year. The deaths attributed to violence numbered 21, against 21 and 32 in the two preceding weeks.

In the 16 largest Scotch towns 1314 births and 834 deaths were registered during the week ended Saturday, April 24th. The annual rate of mortality in these towns, which had been 22·1, 20·8, and 20.9 per 1000 in the three preceding weeks, declined to 18·5 per 1000 in the week under notice. The rate in the several towns ranged from 10·2 in Kirkcaldy, 10·8 in Hamilton, and 11·7 in Clydebank, to 21·2 in Kilmarnock, 22·5 in Coatbridge, and 30·4 in Falkirk.

The 834 deaths from all causes were 104 fewer than in the previous week, and included 128 which were referred to the principal epidemic diseases, against numbers declining from 181 to 133 in the three preceding weeks. Of these 128 deaths, 75 resulted from whooping-cough, 26 from measles, 12 from infantile diarrhœal diseases, 7 from scarlet fever, 6 from diphtheria, and 2 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·8, against 2·0 per 1000 in the large English towns. The deaths attributed to whooping-cough, which had been 104, 75, and 90 in the three preceding weeks, fell to 75 last week, and included 44 in Glasgow, 13 in Dundee, and 7 in Edinburgh. The deaths referred to measles, which had been 45, 41, and 19 in the three preceding weeks, rose to 26 last week, of which 20 occurred in Glasgow and 2 in Dundee. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 10, 18, and 10 in the three preceding weeks, rose to 12 last week, and included 6 in Glasgow and 2 in Aberdeen. The deaths attributed to scarlet fever, which had been 11, 6, and 7 in the three preceding weeks, were again 7 last week, of which 5 occurred in Glasgow. The deaths referred to diphtheria, which had been 6, 11, and 7 in the three preceding weeks, were 6 last week, and included 2 in Aberdeen. The 2 fatal cases of enteric fever were recorded in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 162, 182, and 178 in the three preceding weeks, further fell to 145 in the week under notice, but were 15 in excess of the number in the corresponding week of last year. The deaths attributed to violence numbered 30, against 32 and 21 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,212,380 persons at the middle of this year, 692 births and 521 deaths were registered during the week ended Saturday, April 24th. The annual rate of mortality in these towns, which had been 22·9, 23·8, and 22·1 per 1000 in the three preceding weeks, rose to 22·4 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 25·4, against corresponding rates of 19·6 and 22·4 per 1000 in the English and Scotch towns respectively. The death-rate last week was equal to 26·1 in Dublin (against 18·7 in London and 20·1 in Glasgow), 20·3 in Belfast, 23·1 in Cork, 22·8 in Londonderry, 16·2 in Limerick, and 15·2 in Waterford, while in the 21 smaller towns the mean death-rate was 20·9 per 1000.

The 521 deaths from all causes were 6 in excess of the number in the previous week, and included 41 which were referred to the principal epidemic diseases, against 40 and 30 in the two preceding weeks. Of these 41 deaths, 20 resulted from whooping-cough, 13 from measles, 5 from infantile diarrhœal diseases, 2 from scarlet fever, and 1 from diphtheria, but not one from enteric fever or from small-pox. The mean annual death-rate from these diseases was equal to 1·8, against corresponding rates of 2·0 and 2·8 per 1000 in the English and Scotch towns respectively. The deaths attributed to whooping-cough, which had been 13, 15, and 11 in the three preceding weeks, rose to 20 last week, and comprised 11 in Dublin, 7 in Belfast, and 2 in Londonderry. The deaths referred to measles, which had been 7, 16, and 5 in the three preceding weeks, rose to 13 last week, of which 6 occurred in Dublin, 5 in Portadown, and 2 in Belfast. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 11, 3, and 5 in the three preceding weeks, were again 5 last week, and included 2 each in Dublin and Belfast. The fatal cases of scarlet fever were recorded in Dublin and Waterford respectively, and that of diphtheria in Dublin.

The deaths referred to diseases of the respiratory system, which had been 121, 158, and 119 in the three preceding weeks, further declined to 104 in the week under notice. Of the 521 deaths from all causes, 148, or 28 per cent., occurred in public institutions, and 8 resulted from various forms of violence. The causes of 14, or 2·7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the large English towns the proportion of uncertified causes did not exceed 0·8 per cent.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

The progress of this Fund continues, but the outgoings for which preparation has to be made are now considerable. The Executive Committee, which is very sensible of the great generosity shown by the subscribers, wishes to point out that the work of relief undertaken by the Fund may be of long duration.

The Week's Subscriptions.

The subscriptions received by Dr. Des Vœux up to Tuesday evening last, in addition to those previously acknowledged, are as follows:—

	£	*s.*	*d.*
Association of Physicians of Great Britain and Ireland (per Dr. Hale White, Hon. Treasurer)	105	0	0
Nelson, New Zealand, District Doctors, Chemists, and Dentists	49	10	0
Societies of Medicine in Italy and Medical Men (per Professor Jacobs)	56	7	3
Dr. Barrs, Leeds, collected by—			
Dr. T. B. Hellier... ...	5	5	0
Dr. Rowden	2	2	0
Mr. Sydney Rumboll..	3	3	0
Dr. Frank E. Easton ...	3	3	0
Dr. R. M. Courtauld ...	2	2	0
South Indian Branch, B. M. A....	50	0	0
Southern Branch, B.M.A. (per Dr. Jas. Green, Hon. Sec.) (fifth donation — total £56 1*s.* 6*d.*)—			
Dr. A. Thomas	0	10	6
Dr. Henry S. Taylor...	1	1	0
Lt-Col. J. C. H. Peacocke	0	10	6
Dr. Francis E. Carey	5	0	0
Dr. S. Gaster	2	2	0
Bournemouth Division, B.M.A. (per Dr. E. C. Bond, Hon. Sec.) (third donation, total £121 2*s.* 6*d.*)—			
Dr. James Appleyard	1	1	0
Dr. J. E. Esslemont ...	1	1	0
Dr. K. Mayo Gibbins...	1	1	0
Dr. Mary Jeremy ...	1	1	0
Dr. W. H. L. Marriner	3	3	0
Dr. F. Scorer	1	1	0
Surgeon-General W. F. Stevenson, C.B. ...	1	1	0
Dr. A. Heygate Vernon	2	2	0
North of England Branch of Belgian Doctors' and Pharmacists' Relief Fund (per Dr. James Don and Mr. A. S. Percival, Hon. Secs.) (eighth donation—total, £340 10s.)—			
Dr. E. L. Prowde ...	1	1	0
Dr. Jas. Smith	1	1	0
Dr. J. W. Williams ...	2	2	0
Dr. J. Brydon	2	2	0
Dr. R. Chisholm... ...	1	1	0
Leeds College of Pharmacy (per Mr. F. P. Sargeant)	2	2	0
Mr. W. Reeson	1	1	0
Messrs. Henry Sykes and Son	2	2	0
Mr. E. Hands	0	10	6
Buckrose Pharmacists' Association (per Mr. P. Hawkins)	1	0	0
Mr. A. H. Cupit	1	1	0

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham-gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Ltd.

Correspondence.

"Audi alteram partem."

STOMACH *V.* HEART IN RELATION TO PRÆCORDIAL PAIN AND SUDDEN DEATH.

To the Editor of THE LANCET.

SIR,—In his ingenious and elaborate exposition of the symptoms exhibited in the patient, the subject of his letter to THE LANCET of April 3rd, Dr. H. Walter Verdon suggests the central nervous system as primarily responsible for them, and Dr. C. Edgar Lea, in describing his case in your issue of April 10th, whilst recognising the well-marked physical causes of the suffering, is still of opinion that there were hypersensitive nervous centres essentially concerned in the phenomena. I confess I am personally very sceptical as to segmentary neurosis being a causal factor of importance in angina pectoris, and I had thought that the purely neurosis view of its pathology had long been abandoned. There is, of course, no doubt as to the existence and in some degree the diagnostic value of localised "algesia," or, as I should prefer to say, surface pains, and points of tenderness in angina pectoris, as in association with most forms of visceral suffering, and a nerve centre may become hypersensitive from repeated excitation. The presence, however, in Dr. Verdon's case of commencing ossification, which must, I presume, stand for a marked degree of atheromatous rigidity, in the course of the coronary artery is, in my opinion, a very important factor in the pathology and issue of the interesting case which he describes. The symptom of pain over a præcordial area coming on during marked exertion, especially after a meal, is very common in aortic disease likely to eventuate in angina pectoris. The fact of its arrest on the cessation of effort strongly points to its being a pressure symptom in a tender vessel, as has been pointed out by Sir Clifford Allbutt. Very often the pain returns with the resumption of effort, and that it does not always do so is, I think, capable although difficult of explanation.

I am, Sir, yours faithfully,
R. DOUGLAS POWELL.

Portland-place, W., April 26th, 1915.

TREATMENT OF "INCRUSTED CYSTITIS" BY SUPRAPUBIC DRAIN AND INTRAVESICAL INJECTION OF LACTIC BACILLUS.

To the Editor of THE LANCET.

SIR,—My attention has been called to an address given to the American Association of Genito-urinary Surgeons at Stockbridge, Mass., on May 16th, 1914, by Dr. John R. Caulk, of Washington University Hospital, published in January of this year,[1] in which he says, in bringing the malady before the notice of the association, his object is "to emphasize its seeming malignancy if not properly treated, to outline some of its clinical and pathological features, and above all to present a treatment, which in my hands has worked not only satisfactorily, but like magic." The treatment consists of intravesical injection of lactic bacilli and suprapubic drainage, and in recommending the treatment he affirms: "As far as I have been able to determine, this procedure has never been previously used in incrusted cystitis."

The question of priority in adopting any particular treatment is of little importance as contrasted with a proper estimate of its real value. I am glad that Dr. Caulk has emphasised the usefulness of the lactic bacillus and drainage, in the treatment of cystitis, when there are phosphatic deposits in the bladder, a treatment I have used for more than a dozen years and found most valuable. In an article in THE LANCET,[2] in referring to the treatment of cystitis due to organisms which decompose urea, those which cause ammoniacal urine and the deposit of alkaline phosphates, I wrote:—

> When the urine is alkaline after irrigating an instillation of pure lactic bacillus cultures in milk whey or the filtrate of saurine may be employed with great advantage. By setting up an acid fermentation the urea-decomposing organisms are weakened or destroyed and the phosphates dissolved.

And with regard to suprapubic drainage—

> This drainage must be supplemented by careful irrigation, and if the urine is alkaline, or contains alkaline phosphates after irrigating, an instillation of lactic bacillus cultures should be given. Milk whey containing pure lactic bacillus not only destroys the septic organisms in the bladder but also dissolves phosphatic crusts adhering to the bladder or the wound. The filtrate of saurine does admirably and may be used with advantage in all purulent conditions. A suppurating sac or a granulating surface thoroughly washed regularly with it cleans up rapidly; it acts more satisfactorily than any chemical antiseptic, and the lactic acid bacillus not being a pathogenic organism does no harm. In some cases quite remarkable results have been obtained. …… The drainage employed is by syphoning the urine into a suitable vessel so as to permit the patient to go about with freedom. The method used for the last nine years is easily carried out and has been very successful.

It may be interesting for your readers to know that long before Metchnikoff discovered the value of the Bulgarian bacillus as a destroyer of smaller and less active organisms, in some parts of the Highlands of Scotland butter-milk was a common ingredient of poultices used for the cleansing of putrid sores. I first saw it used by a gamekeeper in the Island of Mull in 1893, and when he told me that the addition of butter-milk cleaned the sore immediately I was very sceptical, but when I saw the result a couple of days later I was more than surprised. Later in the same year an opportunity offered itself of testing the effect of poultices containing butter-milk, and the result satisfied me that there was something good in the treatment, as a sloughing surface, which was very putrid, soon cleared up, and the local irritation consequent on the septic absorption disappeared. Since then I have often used lactic bacilli cultures to destroy septic organisms. At a time when bacteriological research was in its infancy the simple filtrate of butter-milk, the whey, was used, but later pure cultures were made by inoculating sterilised solutions of sugar of milk with Bulgarian bacilli. Without or with a suprapubic opening I have used constantly this treatment of cystitis with most satisfactory results, and Dr. David Watson has employed a similar treatment for gonorrhœa in women.[3] In his admirable book on gonorrhœa he gives details of a method of preparing soft tablets and bougies, which are very convenient for his purpose, but I have always preferred freshly made cultures in a fluid medium as most suitable for urological work.

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[1] The American Journal of Urology, Venereal and Sexual Diseases, vol. xi., p. 1.

[2] Newman: Cystitis, its Causes and its Treatment, THE LANCET, Feb. 24th and March 2nd, 1912.

[3] David Watson: Gonorrhœa and its Consequences, 1914, p 265.

I have been unable to discover whether it is the lactic bacilli or their products that produce the effect. Chemically pure lactic acid dissolves phosphates, but it does not destroy septic organisms to anything like the same extent as freshly prepared cultures of lactic bacilli. I am inclined to believe that the lactic bacilli devour or break up the pyogenic organisms or their products neutralise the toxins of the less virile organisms. There is a bacterial contest takes place in which the lactic bacillus is always the victor. Recently I have used this treatment for the cystitis remaining after nephrectomy for tuberculous kidney. It certainly facilitates recovery in a remarkable way; but, of course, very special care must be taken to have the cultures pure.—I am, Sir, yours faithfully,

Glasgow, April 20th, 1915. DAVID NEWMAN.

THE MANUFACTURE OF SALVARSAN PRODUCTS IN ENGLAND AND FRANCE.

To the Editor of THE LANCET.

SIR,—In THE LANCET of April 3rd I described two cases of acute arsenical poisoning following injections of novarsenobenzol (Billon) and kharsivan (B. W. & Co.) respectively, and I shall be glad if you will allow me to supplement my previous letter by a brief description of two further cases following the use of one of the substitutes for salvarsan, one of which unfortunately proved fatal.

CASE 3.—A perfectly healthy youth, aged 19, was admitted to the Lock Hospital on Feb. 24th, suffering from a syphilitic sore and an early maculo-papular syphilide. On March 2nd he was given an intravenous injection of kharsivan 0·6 grm., which was not followed by any noticeable reaction. On March 11th a second injection of similar strength was administered, and on March 14th he developed intense and universal erythema, accompanied by extreme languor and irritation of the oral, naso-pharyngeal, and conjunctival mucous membranes, swelling of the eyelids, and photophobia. Subsequently there ensued a profuse exfoliative dermatitis, bronchitis, and broncho-pneumonia, to which condition he succumbed on April 12th.

CASE 4.—A strong, healthy man, suffering from early syphilis, received an injection of neosalvarsan (0·9 grm.) on Jan. 13th; on Jan. 18th he was given an injection of novarsenobenzol (0 9 grm.), and on Jan. 26th one of kharsivan (0·6 grm.). This treatment was followed by injections of "gray oil," and on Feb. 20th he was discharged free from symptoms. On March 6th he presented himself, suffering from an acute vesicular dermatitis, which, commencing in the pubic region, spread rapidly over the trunk, limbs, and face; this was followed by profuse desquamation, which is now subsiding (April 20th).

Thus, with the two cases mentioned in a previous communication, I have met with four cases of arsenical poisoning, since the beginning of the present year, following the employment of salvarsan substitutes, and in one of these cases I fear that this treatment must be held responsible for a fatal issue. In your issue of April 10th there appears a communication from the National Medical Research Committee on the manufacture of salvarsan products in England and France, from which it might be imagined that we are now perfectly independent of the German preparation. "The committee have caused experimental assurance to be obtained that both the French and English preparations are equivalent to the German in therapeutic effect. This has been done by a comparison of their relative potencies in curing experimental trypanosomiasis in mice, and experimental spirochæte infections in rabbits." These experimental researches on mice and rabbits may be perfectly satisfactory to the committee, but they are not in the least degree convincing to some who, like myself, are concerned in the treatment of the human subject. In an article in the *British Medical Journal* of April 17th my colleague, Mr. McDonagh, writes: "I am firmly of the opinion, from the several very toxic effects I have seen follow the use of the new products, that the successful manufacture has not been solved, and that the medical profession would be well advised to await the reports of clinicians before using the products, even if they have been passed by scientific workers and submitted to the strictest laboratory controls."

The report alluded to goes on to state: "The committee are confident that as far as the strictest laboratory controls can ensure it the profession and the public are now receiving from English and French sources compounds fully up to the standard of the best German samples previously sold." The confidence of this committee is not shared by Mr. McDonagh or by myself, both of whom have been employing these so-called "German samples" somewhat extensively for the past five years.

Whilst fully recognising the praiseworthy efforts of Messrs. Burroughs Wellcome and Co. to render this country independent of the German product, I do not consider that their efforts so far have been crowned with complete success, though I trust that in course of time they will succeed in manufacturing a substance as free from toxic effects as the preparation elaborated by Ehrlich after years of strenuous labour and after repeated disappointments.

It is within my knowledge that application has recently been made by a well-known firm to import salvarsan and neosalvarsan through a neutral country, but this application has been bluntly refused by the Board of Trade on the ground that the French firm of Poulenc Frères and the English firm Burroughs Wellcome and Co. will shortly be in a position to supply all reasonable requirements for the treatment of syphilis in this country by their salvarsan substitutes. My experience, however, precludes me from recommending the use of these substitutes, and in the absence of the original, I anticipate shortly being compelled to revert to the treatment of syphilis by mercury.

I am, Sir, yours faithfully,
J. ERNEST LANE,
Surgeon to the London Lock Hospital.
Queen Anne-street, Cavendish-square, W., April 23rd, 1915.

To the Editor of THE LANCET.

SIR,—Mr. Ernest Lane, in your issue of April 3rd, raises two questions of much importance at the present juncture. The first refers to the comparative value of the substitutes for salvarsan and neosalvarsan now on the English market, and the second to the need for preventive measures against the "inevitable increase in venereal disease at the termination of the war."

The illuminating article on "The Manufacture of Salvarsan Products in England and France," which you published on April 10th, will doubtless allay much of the feeling of distrust of the new brands which Mr. Lane's letter is sure to have excited, but I would be glad if you will allow me, with all respect, to criticise Mr. Lane's conclusions and to advance my own more favourable findings.

Mr. Lane states that while he found the results from the use of the substitutes "fairly satisfactory" their "toxic effect is much more intense," and he sounds a note of warning as to their employment. Both of the cases which Mr. Lane cites in support of the intense toxicity theory are capable of a somewhat different construction. Thus in Case 1 a course of intramuscular injections of mercury had to be interrupted owing to the onset of symptoms of mercurialism, and the dermatitis, although it followed an intravenous injection of novarsenobenzol (Billon) administered three weeks after the last mercurial injection, may have been partly or entirely a mercurial dermatitis. I have had under my care three cases of intense general dermatitis due to idiosyncrasy to mercury. Apart from this possibility, the evidence already provided of the patient's tendency to drug intolerance would indicate the need for caution and would suggest a small initial dose.

In Case 2 a second injection of kharsivan was given eight days after the first injection. For either salvarsan or kharsivan this is too short an interval if full doses are employed. Mr. Lane, unfortunately, omits to mention the dosage.

In criticising kharsivan we must not forget that it is comparable only to salvarsan and not to neosalvarsan. Both kharsivan and salvarsan are more toxic and at the same time more efficacious than neosalvarsan. The experience of my assistants and myself with kharsivan, which now covers 180 injections, leads me to conclude that its immediate and remote effects differ in no way from salvarsan. We have found that it is subject to exactly the same limitations and risks, but that it is equally beneficial in promoting the healing of syphilitic lesions. We have not been without our troubles in this series of cases, but we have no reason to blame the drug but only our methods. Two patients were seriously ill. Both of these were pregnant women who received the excessive dose of 0·6 grm. Personally I never use 0·6 grm. either of salvarsan or kharsivan. To do so in pregnant women is to invite complications. Nevertheless, in 43 out of the 180 kharsivan injections doses of 0·6 grm. were used. All of these 43 injections were given to women, and it was only amongst them that any troublesome reactions were experienced. In no case was dermatitis encountered, but more or less gastro-intestinal irritation was evident in 24 cases. Complaint only of headache was made in 4, of feeling sick in 3; vomiting was present in 19 and diarrhœa in 6. A temperature of 100° F. or over was found in 6 instances. There is here, I think, sufficient evidence to warrant the conclusion that a dose of 0·6 grm. is inadvisable, and those of us who have been using this quantity have at last been induced to abandon it. Thrombosis we have not met with since the early days of salvarsan treatment, but when kharsivan is allowed to infiltrate the tissues a cellulitis, as in the case of salvarsan, is to be expected.

That salvarsan is not less toxic than kharsivan in similar dosage is proved by our records, but space will not permit any elaboration on this point. Neosalvarsan in corresponding dosage is much less prone to excite irritation, but how neokharsivan will compare with neosalvarsan I am as yet unable to say, having used only 12 tubes of this preparation. I would like to advise, however, that the instructions accompanying the vial should be carefully read and rigidly adhered to.

With regard to Mr. Lane's plea for preventive measures calculated to control the spread of venereal diseases at the termination of the war, it is to be hoped that the Army Medical Department will endeavour, for the sake of military efficiency as well as for the public well-being, to supply effective treatment for their venereal cases.

I am, Sir, yours faithfully,
Glasgow. DAVID WATSON, M.B., C.M. Glasg.

THE MENTAL TREATMENT BILL.

To the Editor of THE LANCET.

SIR,—Now that a Bill is being promoted to make it possible for us to treat without certification soldiers and sailors suffering from serious mental disorder due to shock, this is surely an opportunity for extending similar benefits to civilians in special instances. There are many cases of mental disease in which recovery occurs comparatively quickly under systematic residential treatment, and this possibility is evidently admitted by the authorities, the whole point of the new Bill being the avoidance of the stigma of certification. Yet many persons have to be certified for conditions likely to recover within a few months because the law at present does not permit of their being taken into nursing homes or doctors' houses otherwise.

Is there any sound reason why it should not be made possible to treat such cases without certification for a period of six months, provided that certain safeguards are erected? And for this it should be sufficient for the Government to appoint several experienced alienists as special consultants for this purpose, giving them power to issue a permissory certificate to any medical man who has the care of an individual bordering on insanity, yet in whose case there is a reasonable possibility that recovery may occur soon with residential treatment. Such a certificate would be one concerning treatment only, and not affecting the status of the patient as a person of sound mind. Obviously certain conditions should be excluded from the operations of such a Bill under any circumstances, particularly general paralysis, cases of advanced dementia, and all cases exhibiting evident homicidal or suicidal tendencies.

I am, Sir, yours faithfully,
EDWIN L. ASH, M.D. Lond.
Harley-street, W., April 26th, 1915.

THE SCOTOMA OF MIGRAINE.

To the Editor of THE LANCET.

SIR,—With regard to Dr. F. W. Edridge-Green's article on the above subject in your issue of April 24th, though I do not quite follow all his arguments, nor can I produce in myself the phenomena he describes which can be noticed on awaking in the morning and looking at a white ceiling, I feel certain that he is right in attributing the scotoma to disturbance "of the circulation of the eye." I think this is shown very clearly by the following case.

A student of Guy's Hospital some 20 years ago had ocular migraine, which took the form of complete blindness of one eye, and came on very rapidly. I had the opportunity on several occasions of examining the eye when the attack was on. As far as I remember the pupil was always dilated; the ophthalmoscopic appearances were most marked and always the same. The eye could not see the light from the ophthalmoscope mirror. The retinal veins were so engorged that they looked almost bursting; the arteries—perhaps only by contrast—were thin.

On every occasion I watched the eye whilst the attack lasted, and was always able to say "You are beginning to see again," which meant that the veins were beginning to empty and gaining their natural size, which they succeeded in doing in the course of a few minutes, with complete return of sight. When this gentleman left the hospital he went into practice in a healthy seaside town, where he never had another attack. As far as I remember, but am not certain about it, he suffered from some form of heart trouble.

One of my colleagues at Guy's, long since dead, suffered in exactly the same way. He had conical cornea in one eye, and that eye was very little use to him. His first attack of migraine came on when he was in the street, fortunately not far from home. He went almost suddenly blind in his good eye and had to get someone to take him home. He was naturally very much alarmed, and it was at the beginning of his career. Whilst he was telling his wife that he feared all was over with him his sight began to return and was soon entirely restored. He consulted me about it and I told him it was migraine, and I thought due to something wrong with circulation, that he knew the worst of it and need not trouble himself about it. He had other attacks, but I never had an opportunity of examining his eye during one; at other times the eye was normal except for a low degree of myopic astigmatism. He had cardiac trouble of which he eventually died. I do not know the nature of it.

I am, Sir, yours faithfully,

Brook-street, W., April 25th, 1915. CHARLES HIGGENS.

OUR LIMBLESS SAILORS AND SOLDIERS.

To the Editor of THE LANCET.

SIR,—A great number of sailors and soldiers serving at the war have already been disabled by loss of limbs, and there will be many more before the war is ended. These men are now being discharged from hospitals and returning to their homes or friends with their wounds recently healed, and without adequate arrangements being made for their future care, comfort, or prospects. The country owes it to these gallant men that proper provision should be made for them, that they should be cared for until they have fully recovered their strength and nerve and learned how to use their new limbs, so as to become capable of taking up employment again in the form best suited to each. This cannot be done in existing hospitals.

A committee has been formed recently with the gracious approval of Her Majesty the Queen, and with the sanction of the Directors-General of the Navy and Army Medical Services, and steps will be taken immediately to establish one or more convalescent auxiliary hospitals (including an officers' branch) where these poor fellows may be concentrated and where they can get fitted and accustomed to their artificial limbs under the best conditions, with the generous advice of several eminent orthopædic surgeons. Application is being made to the Prince of Wales's Fund for a grant. We feel sure that an ever-generous public will also readily respond to our appeal. All communications and donations should be addressed to C. H. Kenderdine, St. Stephen's House, Westminster, S.W. (marked "Auxiliary Hospital").—Yours obediently,

KATHLEEN FALMOUTH,
April 29th, 1915. M. E. GWYNNE HOLFORD.

Obituary.

SIR THOMAS SMITH CLOUSTON, KT., M.D. EDIN., LL.D. EDIN. & ABERD., F.R.C.P. EDIN.,

CONSULTING PHYSICIAN, FORMERLY MEDICAL SUPERINTENDENT, TO THE ROYAL ASYLUM, MORNINGSIDE, EDINBURGH.

THE death of Sir Thomas Smith Clouston, which took place suddenly at his residence in Edinburgh on April 19th in his seventy-fourth year, has deprived the profession of one of its leading alienists. For nearly half a century he devoted himself entirely to the study of mental diseases. Born in Orkney, where his father lived, he received his early education at the West End Academy, Aberdeen, and afterwards entered the University of Edinburgh, where he had a brilliant career as a student. He qualified in 1860 as L.R.C.P. Edin. (of which College he became a Fellow in 1873), and in the following year graduated M.D. at the University, where he was the thesis gold medallist, and this, together with the winning of the Fothergill gold medal in 1870, foreshadowed the distinguished future before him. It is noteworthy that two of his fellow graduates were James Bell Pettigrew, the eminent anatomist, and John Anderson, the naturalist.

Immediately after qualifying he was appointed assistant physician under Dr. Skae at the Morningside Asylum, his two colleagues being the late Sir John Sibbold and Dr. David Yellowlees. This position he held for three years, and in 1863 was appointed superintendent of the Cumberland and Westmorland Asylum at Carlisle. He held this post for ten years, made his mark in it both as observer and administrator, and left to accept the position of physician-superintendent to the Royal Asylum, Edinburgh, where for 35 years he laboured assiduously to render the asylum a model institution for the treatment of mental diseases and a training school for alienist superintendents of other institutions throughout the world. Almost immediately after his appointment he set to work to renovate and reconstruct the institution, and the success of his labours was seen in the opening of Craig House. Some idea of the magnitude of the work of reconstruction may be realised by the fact that during the 35 years of his office the sum of £180,000 had been expended by the directors of the institution which has achieved great financial prosperity during that period.

The lectures on lunacy and cognate subjects which he delivered to the students at the Royal Edinburgh Asylum were marked by a clearness of thought and lucidity of expression which at once placed him in the forefront of teachers in mental diseases, and in 1879, six years after his appointment, he became the first lecturer in mental diseases in the University of Edinburgh. Four years later—namely, in 1883—the first edition of his lectures was published under the title of "Clinical Lectures on Mental Diseases," and the book, which has gone through six editions (the last was published in 1904) has done more perhaps than any other work on the treatment of mental diseases in spreading throughout the world enlightened methods of treatment and wise conceptions of the nature of mental aberration. Among his other notable works are the "Neuroses of Development," published in 1891, the "Hygiene of the Mind," which has seen five editions, and "Unsoundness of Mind, which was published some three years ago.

He was the editor of the *Journal of Mental Science.*

The proper scope and direction of education and the mischief and its prevention due to alcoholism, being closely associated with the subject of which he was so distinguished an exponent, were naturally among the many sociological questions with which he interested himself. His lectures on matters affecting the morality and mental health of the country were always eagerly attended and were practical in their results. He took a prominent part in the establishment of a council of public morals in Scotland. In the question of eugenics and marriage he was also much interested, his little book "Before I Wed" containing sound and practical advice of a much needed character. In 1910 he gave evidence on behalf of the British Medical Association before the Royal Commission on Divorce and Matrimonial Causes.

Of the many honours which were bestowed upon Sir Thomas Clouston in the course of his life he valued none more highly than that of the freedom of Kirkwall, the capital town of his native Orkney, which he received in 1908. He was an ex-President of the Medico-Psychological Association and of the Edinburgh Medico-Chirurgical Society, and was President of the Royal College of Physicians of Edinburgh in 1902 and 1903. The University of Aberdeen conferred upon him in 1907 the honorary distinction of LL.D., and in 1911, when the King and Queen visited Edinburgh, he was knighted. In the same year the University of Edinburgh conferred upon him its honorary Doctorate of Laws. During the annual meeting of the British Medical Association at Edinburgh in 1875 Dr. Clouston was Vice-President of the Section of Psychology and President of the same section at the meetings held at Brighton in 1886 and at Edinburgh in 1898.

Dr. Clouston married Harriet Segur, the daughter of William Storer, of New Haven, Connecticut, U.S.A., who survives him, with two sons and one daughter, the latter being the wife of Dr. David Wallace, C.M.G., surgeon to the Edinburgh Royal Infirmary. One of his sons is the well-known humorous writer, Mr. J. Storer Clouston.

EDWIN THOMAS MOSSE TUNNICLIFFE, M.R.C.S., L.S.A.

THE death of Mr. Edwin Thomas Mosse Tunnicliffe, of Biana, North Finchley, occurred suddenly on April 15th last, while playing golf. Death was due to a form of morbus cordis, Adams-Stokes disease, of which he had had several previous attacks.

E. T. M. Tunnicliffe was born in 1860, and was the son of Frederick Warner Tunnicliffe, of Biana, Eccleshall, Staffs. He was educated at private schools, and, making up his mind to enter the medical profession rather later than the average student, joined St. Bartholomew's Hospital in 1883. He qualified L.S.A. in 1887, and M.R.C.S. in 1888, and almost immediately bought a small share in an old-established practice at North Finchley and Whetstone. The practice increased rapidly and in 1902 the firm dissolved partnership. For four years Tunnicliffe worked a very large practice single-handed and the early symptoms of the breakdown which followed occurred during this strenuous time. In 1906 he was fortunate in obtaining a partner who much relieved the strain of work, and at the time the end came, Tunnicliffe was thinking of slowing down and gradually retiring from practice, a sadly common position.

From a small beginning Tunnicliffe built up one of the largest practices in his district. All who met him in consultation, and they were many, recognised at once that they were dealing with a man well trained in the principles of medicine and surgery, scrupulous in his regard for medical ethics, and thoroughly capable of estimating the relative value of clinical fact. The respect in which he was held by his patients was testified to by the number of people attending his funeral and by the very many tokens of condolence sent. He leaves a widow, a son who is just completing his training at Sandhurst, and a daughter, to whom in their bereavement the sympathy of the medical profession will go out.

THE LATE DR. J. H. BENDLE.—We published last week a short note of the death of Dr. J. H. Bendle, the county oculist for Somerset. We have since received from Dr. W. G. Parker the following appreciation of the late Dr. Bendle's work:—"Dr. Bendle was my colleague in the school medical service in Somerset for over six years. His death is a great personal loss to his colleagues, to whom he was always a true friend and loyal comrade. Perhaps one of his most outstanding characteristics was his loyalty to his friends, of whom he had many. He was a good companion, could tell a good story and tell it well, and an evening spent with him was never dull. A supremely conscientious worker, who devoted much care to detail, he was also a sound and capable practitioner with a wide knowledge, which he brought to bear on his work. In his work as school oculist, each individual case received careful thought, as well as a thorough examination, and he was never satisfied with any result but the best possible. He remembered and followed up his cases for years, taking a great interest in them and keenly watching their progress. He never spared himself, and spent at his work many hours which should have been free for rest and recreation. Both as an official and as a man he set and lived up to a very high standard. His death is a great loss to the school medical service, and his place will be a difficult one to fill satisfactorily."

DEATH OF DR. JOSEPH HARWOOD WILSON, OF STANDISH, LANCS.—Dr. J. H. Wilson died on April 8th, at the age of 49, after only a few days' illness. He received his early education at Wigan Grammar School, afterwards proceeding to Eastbourne College, Owens College, and Durham University, where he graduated in 1887. He first entered upon practice at Hull, and went to Standish about 23 years ago. Here he was appointed medical officer of health to the urban district council and to the Standish district of the Wigan Union. He also became surgeon to the Lancashire and Cheshire Miners' Permanent Relief Society and surgeon to the Standish Branch of the British Red Cross Society, being in charge of the Woodlands No. 3 Hospital. He leaves a widow.

THE LATE MR. FRANCIS JOHN AUGUSTUS BALDWIN.—An inquest was held at Padstow, Cornwall, on April 22nd on the body of Mr. F. J. A. Baldwin, which was recovered from the sea the day previous. Mr. Baldwin was a passenger on the *Falaba*, which was torpedoed by a German submarine on March 28th in St. George's Channel. The jury returned a verdict of "Found drowned," and expressed indignation at the inhuman conduct of the crew of the submarine in sinking the *Falaba*. Mr. Baldwin, who was 55 years of age, was in the Colonial Medical Service at Nigeria, West Africa. He was also a justice of the peace and deputy coroner.

THE LATE BENJAMIN D. C. BELL, L.R.C.P., L.R.C.S. Edin., J.P.—The death of Mr. Benjamin Bell took place at his residence in Kirkwall, Orkney, on April 7th, at the age of 55. He was a native of Shetland, and was educated in Edinburgh, where he qualified L.R.C.P., L.R.C.S. in 1884, in which year he commenced practice in Orkney. He was medical officer of the Borough of Kirkwall, and held a number of other public appointments. He leaves a widow, a daughter of Sir Alexander Christison, Bart.

The War.

THE CASUALTY LIST.

AMONG the names of officers appearing in the casualty lists published since our last issue are the following:—

Killed: Second Lieutenant Hugh Bertrand Neely, of the Suffolk Regiment, a former student of Guy's Hospital and an L.D.S.

Wounded: Major H. A. J. Gidney, I.M.S., and Captain E. Percival, R.A.M.C.

THE HONOURS LIST.

Temporary Lieutenant James Robertson Campbell Greenlees, R.A.M.C., has been appointed D.S.O. for his great gallantry and devotion to duty at Neuve Chapelle from March 10th to 14th, 1915, in attending on the wounded under very heavy fire. Lieutenant Greenlees has twice before been brought to notice for similar conduct.—Lieutenant J. G. Priestley, R.A.M.C., has been awarded the Military Cross for gallantry and devotion to duty at Neuve Chapelle on March 13th, 1915, when he continued attending to the wounded with great bravery, although himself badly wounded.

The Military Cross has been awarded to Lieutenant A. C. Hincks, R.A.M.C., for conspicuous gallantry and devotion to duty at Neuve Chapelle from March 11th to 14th, in collecting the wounded whilst under heavy fire. On the night of March 13th and 14th, whilst he was attending on a wounded man, a shell struck the ambulance wagon, killing the man and rendering Lieutenant Hincks unconscious. On recovering he at once proceeded to collect the wounded under fire, and continued doing so throughout the night.

THE WORK OF THE ROYAL ARMY MEDICAL CORPS AT THE FRONT.

Mr. Tennant, the Under Secretary for War, made a statement this week in the House of Commons with regard to the work of the Royal Army Medical Corps at the front which must prove extremely gratifying not only to that corps and to the authorities of the Army Medical Service but also to the whole medical profession. He described the health of the British troops as singularly good throughout, taking into consideration all the circumstances of the existing war, and he based his opinion upon a very clear appreciation of what has really happened. His praise was well informed; the early critics of the Royal Army Medical Corps were not. Our army has been attacked, as it was bound to be, by different epidemic diseases at different places, but the measures of control have been prompt and thorough, with the result that the mischief threatened by measles and enteric fever has been promptly circumscribed. There is not a single case of dysentery amongst our troops, said Mr. Tennant, and we agree with him that that fact is a remarkable one. Such freedom of our army from disease constitutes the most speaking tribute to the work of the Royal Army Medical Corps, but preventive medicine and sanitation are not the only fields in which their work has been extremely fine. The arrangements for the care of the wounded, for bringing them from the trenches to the clearing stations, from those stations to base hospitals, and, finally, to this country, have alike been marked by efficiency, promptitude, and humanity. We know how well deserved are Mr. Tennant's eulogies of the Royal Army Medical Corps, and we hope that his words will be widely read. Perhaps they will meet the eyes of some of those who, failing to realise the conditions of war at all, found the medical care of the wounded at the battle of Mons, for example, inadequate. The public should know more now of the way in which war is waged than it did in September. In September the public was inclined to be critical of the Royal Army Medical Corps, and we received communications stating that our wounded were not receiving the treatment that they had the right to expect. This was in the terrible days which marked the arrival of our Expeditionary Forces at the front. They were immediately compelled to retire in the face of overwhelming numbers and were subjected on many occasions to heavy slaughter. It is obvious that the battlefields upon which our wounded lay were immediately occupied by the enemy, that the places of retirement selected for dressing stations could no longer be used, and that situations designed for clearing hospitals came early within the range of attack. The recognised routine for collecting the wounded, for sorting them, and for evacuating them was thrown out of gear. Every endeavour was made to collect as many wounded as possible, and despite the personal risks incurred in the task it was attempted to give first aid to those collected and where possible to arrange for their transport to more permanent shelter. Ever since those terrible days when the medico-military service, sharing the fortunes of the army which it accompanied, had for a time to give way to superior force the care of our wounded in the field has been admirably organised and the system of the work of the Royal Army Medical Corps has been the special admiration of our Allies. We hope some of the early critics of the corps will note Mr. Tennant's words.

ASPHYXIATING GASES IN WARFARE.

There has been considerable speculation as to what were the asphyxiating gases employed by the Germans in recent engagements. The point is of some interest since the method for a time gave an undoubted advantage to the ruthless enemy. From the accounts of sufferers and medical observers it seemed clear from the outset that one of three gases had been used—chlorine, sulphur dioxide, and nitrogen tetroxide—and an official report from Mr. J. S. Haldane, F.R.S., our greatest scientific expert on the physiology of respiration in poisonous conditions, now pronounces in favour of chlorine or bromine. These are all heavy, irritating gases and cheaply produced, except bromine, whose employment can only have been mentioned as a possibility. All are coloured gases, except sulphur dioxide, which, however, may assume a yellow colour if made from sulphur sprinkled on burning wood. It would seem doubtful, however, if fire was used in the production of the gas, inasmuch as the heat of the combustion would cause the vapours to ascend rapidly at the point of production, when they would be largely diluted with air. This seemed from the first to rule out sulphur dioxide; moreover, if this gas had been used the description of the fumes as "sulphurous" would surely have been reported. No such familiar word was used. The employment of nitrogen tetroxide for the purpose was improbable, since it would be employing a valuable constituent of explosives. Nor could the suggestion that the gas was carbon monoxide be accepted, since this gas is, of course, colourless, while it is slightly lighter than air. To the chemist the evidence was at once considerably in favour of chlorine having been used in some form or other. This gas is very cheap, and is easily liquefied and preserved in metal cylinders. It is heavy and is yellowish or yellowish-green in colour. It may readily be generated from bleaching powder used in the portable form of cubes. Chlorine is a strongly asphyxiating gas, which takes a long time to mix with air, being two and a half times as heavy.

It is fortunate that the methods of prevention are similar in each case. All these gases are soluble in water and are of an acid nature. A wet cloth (preferably with some carbonate of soda) should be placed over the mouth, and breathing should take place through the mouth, returning expired air through the nose. This procedure will practically defeat the diabolical design, which to some extent loses its terrors with its mystery. The gas can only be used comparatively locally.

SCOTTISH MILITARY HOSPITAL AT BANGOUR.—Negotiations have been completed for the taking over of Bangour Village by the War Office for the purpose of a great military hospital. It is at Bangour that the Edinburgh District Asylum is situated, an institution that comes next to Woodilee and Hartwood in point of size among Scottish asylums, and is one of the most up-to-date mental treatment centres in the United Kingdom. The transfer of the ordinary inmates to other asylums all over Scotland has already commenced, and it is expected that the village will be ready for occupation as a hospital for sick and wounded soldiers in six weeks' time. While the conversion of other public institutions into military hospitals is not uncommon, as, for example, Craigleith Hospital, this is the first instance in Scotland in which an asylum has been so utilised. The step which has now been taken, however, is merely in development of a scheme which has been in progress in England for several months. In regard to Bangour, the first step taken was when the military authorities approached the General Board of Control for Scotland at the end of March "with the object of obtaining the use of an asylum in the vicinity of Edinburgh capable of providing accommodation for upwards of 1000 sick and wounded soldiers." On considering the matter the Board of Control came to the conclusion that the Edinburgh District Asylum was the only institution that fulfilled the War Office requirements, and they accordingly advanced the proposition to the District Board of Control that the asylum be handed over. Simultaneously, the Scottish Board of Control addressed a letter to the other district boards throughout Scotland, inviting their coöperation in the work of transferring the patients which must follow the conversion of such an institution into a military hospital. The response of the Edinburgh District Board was one of prompt and hearty concurrence, and the ready way in which the other local authorities fell in with the general body's appeal disposed of any misgivings as to the alternative housing of the patients. From all parts of the country offers have been made to receive a certain number of patients, which in the aggregate more than covers the total number (890) at present accommodated at Bangour. At the Royal Asylum at Morningside 50 cases of sick people have already been received, whose removal further afield might have been undesirable. Other centres to which patients will be transferred are Melrose, Rosslynlee, Haddington, Fife, Larbert, Hartwood, Hawkhead, Ayr, Dumfries, Lochgilphead, Perth, Murthly, Montrose, Dundee, Aberdeen, Elgin, Banff, and Inverness. The Royal Asylum, Morningside, will act as receiving hospital for all the cases of insanity occurring in Edinburgh during the military occupation of Bangour. Although the accommodation for insane persons at Bangour is less than 1000 beds, investigation has shown that it will be possible comfortably to acccommodate 1350 sick and wounded, for the dining rooms and sitting rooms necessary in the case of insane patients may, in the case of wounded men, be converted into wards. The military authorities after inspection have declared the hospital admirably suited to the object in view.

The War Office will take over the institution as a "going concern." The only exception will be in regard to the farm, which will continue under the control of the District Board, a certain number of patients being retained for its working. The produce will, as usual, go to supply the institution. Few structural alterations will be necessary, though naturally considerable extra equipment will be required, but the provision of this will be made by the War Office or by the District Board on their behalf. The present hospital has an operating room, a laboratory for bacteriological work, and an electrical room (with X ray apparatus); but a second operating theatre will be necessary. The full staff will be retained at present, but a staff of visiting physicians and surgeons will also be appointed, and the resident and nursing staff will be increased. The present staff numbers 200, and it may be noted that close on 50, including two doctors and several nurses, are serving at home and abroad. Bangour has greatly developed in every way since its establishment. When the first patient was received on June 1st, 1904, there was accommodation for only 200; now almost five times that number are receiving treatment. Bangour is situated in the parish of Uphall, in the county of Linlithgow, and the estate in the hands of the District Board comprises 960 acres. The asylum is built on the village plan, and consists of a medical section and an industrial section. In the medical section are accommodated recent and acute cases, and those requiring special supervision or hospital treatment. This section comprises the admission ward, 120 beds; four villas, with 150 beds between them; a hospital, with 150 beds; and a sanatorium, with 20 beds. In the medical section there is also a nurses' home, with accommodation for 80 nurses. Among the houses in the industrial section there is accommodation for 460 patients—200 women and 260 men. There are also buildings common to both sections of the institution, such as a recreation hall, having a seating capacity for over 700 persons. The bakery, kitchen, stores, and laundry are capable of providing for a population of at least 1500. Bread for the entire village is baked at this bakery, and another source of food-supply is the farm, the dairy and vegetable produce of which is considerable. The buildings are situated about 500 feet above sea-level on a gentle southern slope. The air is bracing, the estate well wooded. In the opinion of the army authorities it admirably meets the soldier's requirements—rest and quietness. A railway station in the grounds constitutes an important additional convenience.

Dr. John Keay, who will continue to act as medical superintendent, was appointed to the institution on its establishment.

VACANCIES FOR MEDICAL OFFICERS.—We are informed that there are vacancies for two or three more medical officers in the 3/3rd H. C. Field Ambulance. As this unit has only just been formed, qualified medical men will have the opportunity of getting a full insight into their military duties during the training of the men. As so many medical men fear that their ignorance of drill and general army routine may handicap their efficiency, this chance of gradual training may offer special inducement. Applications should be addressed to Major E. A. Houchin, R.A.M.C., Officer Commanding, 62, Claremont-road, Surbiton, Surrey.

AID FOR BLINDED SAILORS AND SOLDIERS.—St. Dunstan's Blinded Soldiers' and Sailors' Hostel, Regent's Park, N.W., organised by Mr. C. Arthur Pearson, chairman of the Blinded Sailors' and Soldiers' Care Committee, is conducted with the concurrence and support of the War Office, the National Relief Fund, the Red Cross Society, and the Order of St. John, and the National Institute for the Blind. Everything suggested by the most careful thought of men and women best qualified to advise as to the needs of the blind is to be found there, for the Blinded Sailors' and Soldiers' Care Committee has not depended upon its own unaided efforts, but has called to its assistance experts in the treatment of the blind from all parts of the kingdom, and it is consequently in a position to offer the blinded sailor and soldier advantages which are of the highest order, including the provision of a seaside home situated at Brighton. Almost without exception those responsible for institutions for the blind are working in coöperation with it, and are helping blinded sailors and soldiers with whom they come in contact to participate in the advantages thus open to them. Every inmate of the institution is taught some means of gaining a livelihood and is instructed in the Braille system of reading and writing by blind instructors, a fact which imparts a most useful initial confidence. The house, which was lent by Mr. Otto Kahn, stands in 15 acres of ground and thus enables poultry-farming and market-gardening—the latter under the care of Captain Pierson-Webber, himself a blind expert in the craft—to be added to boot-making, mat-making, basket-making, carpentering, massage, and other occupations that can be pursued by the blind.

At a meeting of the board of directors of the Royal Blind Asylum and School, Edinburgh, held on April 26th, it was agreed, on the recommendation of the Blinded Sailors' and Soldiers' Care Committee, to establish in Edinburgh a training centre where blind Scottish sailors and soldiers shall be taught "to be blind," trained to read and write in Braille, and in such handicrafts as may be found suitable. If necessary a residence or hostel will be established for the temporary accommodation of those receiving such training. The Scottish Branch of the Red Cross Society, the various Scottish institutions and societies for the blind, and the Naval and Military authorities will be invited to coöperate in the work by reporting to the institution all blind sailors and soldiers coming under their notice; and application will be made to the National Relief (Prince of Wales') Fund and the Scottish Red Cross Society for grants to meet the expenses incurred. An appeal will also be made to the public for subscriptions.

THE KING GEORGE HOSPITAL.—The large building near Waterloo Station has made steady progress towards completion, and is now practically ready for occupation. The equipment and provision of the building for 1650 patients has been, of course, a very costly affair, and especially so as the price of a good deal of the material has risen considerably of late.

The last call is for five microscopes for use in the wards, and the committee venture to ask if any members of our profession would be willing to lend them (as people have been kind enough to lend field-glasses and periscopes to the troops at the front). The microscopes should have a half and a quarter inch objective. Sir Frederick Treves and Mr. Edmund Owen would be glad to hear of anyone who is ready to come forward with an offer, and they would do their best towards seeing that the microscopes are duly returned to their owners when the hospital is closed. The office of the joint committee is at 83, Pall Mall, S.W., to which correspondence on the subject may be sent.

SUSPENSION OF INDIAN MEDICAL SERVICE EXAMINATION.—It has been officially announced that the open competitive examination for appointments in the Indian Medical Service will be discontinued for the duration of the war after the July examination. Instead, the Secretary of State for India will nominate to such appointments as may be necessary during the interim, and on the cessation of the war will make necessary appointments from qualified persons, either European or Indian, who have held temporary commissions during the war in the Indian Medical Service or Royal Army Medical Corps, or who have served with British or Indian Expeditionary forces, hospitals, or hospital ships. Due announcement will be made when the ordinary examinations are to be resumed.

FROM A HOSPITAL IN THE SAVOY.—An English correspondent in charge of a hospital behind the southern lines of the French army has sent us a description of hospital life which shows clearly that our allies in their recent successful advances have cheerfully paid the price of war. While the French casualties have been less than those of the Germans, they have none the less been large, and a number of very serious injuries occur daily. "The removal of damaged tissues, splinters of bone, and wayward missiles gets monotonous in the long run," writes our correspondent, "and we welcome anything for a change. I have a case of cerebrospinal meningitis in a farm lad 15 miles away from hospital. I did lumbar puncture and centrifugalised the cerebro-spinal fluid, and made a preparation, stained it, and obtained the diplococcus, and sent a message to the Prefecture at Chambéry for a supply of serum, which duly arrived. (My device for a centrifugator is to tie the test-tube with sticking plaster to a spoke of my motor cycle and set the engine going. In five minutes 'ca y est.') I rather expected, given the proximity of so many soldiers, that the authorities would have communicated with me further, but there is a gratifying confidence that all steps with regard to the spread of disease will be taken by us upon our own initiative. I am engaged in a very busy practice extending 20 miles round. It is appalling what a quantity of phthisis there is about. The well-to-do sturdy peasant farmers' houses are filthy; the inside walls are rough uncoated stone, with millions of little ridges and added shelves for dust collection, and totally unwashed floors. When I remonstrate I am told, 'The fact is, there is no one to attend to such things.' 'But,' I say, 'you might smear mud over the walls and make them smooth with a layer of limewash as the Arabs do, and you might scrub your floors now and then, for there are plenty of women.' 'Oh,' they say, 'everybody works on the land, and when they have done their day's work no one has the energy to turn-to indoors. So there you are!" Our correspondent winds up by extolling the thrift and good sense of the French peasants in making palatable salads out of dandelions and nettles.

WOUNDED ALLIES RELIEF COMMITTEE.—HELP FOR MONTENEGRO.—The Wounded Allies Relief Committee has decided, in consequence of the spread of typhus and typhoid fever in Montenegro, to despatch to Montenegro Dr. Isabel Ormiston, an Australian lady, and a graduate of Sydney University and Chief Medical Inspector of Schools to the Government of Tasmania. Dr. Ormiston was in charge of the Kursaal Hospital at Ostend, until she and the English Voluntary Aid Detachment which assisted her were ordered by the Germans into Holland. Since Christmas she has been working at the Queen of the Belgians' Hospital at La Panne. When Dr. Ormiston has reported to the committee on a suitable base, means of transport, and the most desirable type of unit, her requirements will be despatched with the minimum of delay. All contributions towards the unit, which will be provided with an ample supply of disinfectants, disinfectors, and destructors, will be gratefully received by the honorary treasurer, Mr. T. O. Roberts (manager), London County and Westminster Bank, 217, Strand, W.C.

THE NATIONAL COMMITTEE FOR RELIEF IN BELGIUM.—This committee has issued during the week a powerful appeal for assistance in money to meet the terrible emergency in Belgium, which is stated to be no less than the slow starvation of much of the population. The appeal is signed by the Archbishop of Canterbury, Cardinal Vaughan, the Lord Mayor of London, the Duke of Norfolk, Lord Rosebery, and other influential persons, and the treasurer is Mr. A. Shirley Benn, M.P.

GRATUITOUS TREATMENT OF OFFICERS AT AIX-LES-BAINS.—Arrangements have been made for carrying on the treatment at the bathing establishment, which is State property, as usual. It has been intimated to the director, Dr. Durand Desmond, that his proposal to accord gratuitous treatment to sick and wounded officers of the Allied Armies has been officially approved. This is a valuable offer in view of the large number who have contracted rheumatism in the trenches, or have been left with damaged or stiff joints as the result of wounds. A certain number of the principal hotels have been reopened in order to provide accommodation for visitors, and the hotel proprietors' syndicate announce a special tariff varying from 5 to 10 francs a day, inclusive, for convalescent officers. The Casino will open shortly, and provision will be made for light musical entertainments. The train service between Paris and Aix is as rapid and as comfortable as heretofore.

SURGICAL DRESSINGS FOR THE ALLIES.—The Kensington War Hospital Supply Depôt, situated at 11–12, Kensington-square, has over 600 workers coöperating with the Kensington division of the Red Cross Society in the production of surgical dressings and comforts for the soldiers. These workers, besides their labour, provide between them sufficient funds to meet the weekly expenses of the depôt. But as their present premises do not allow them to keep pace with the demands, they appeal for gifts of old linen, dressing-gowns, shirts, socks, slippers, and rubber hot-water bottles. We are informed that, encouraged by the success that attended on the Kensington War Hospital Supply Depôt, its organiser, Miss Ethel McCaul, has opened a second depôt at 32, Queen Anne-street, Cavendish-square, under the presidency of Alderman John Fettes, J.P. The committee consists of Sir Thomas Barlow, Sir W. Watson Cheyne, Sir Rickman Godlee, and Dr. Frederick Taylor. The secretary is Mr. Frank Juler.

MEDICAL RELIEF FOR SERBIA.—Sir Thomas Lipton's yacht is announced to make a second cruise in connexion with Serbian relief, sailing on May 1st from Southampton for Salonika and returning in about two months. Dr. Elsie Inglis, who organised the Scottish Women's Hospitals in Serbia and France, herself left for Kragujevatz, in Serbia, on April 24th to visit the hospital, which has been at work there since December among the wounded and the typhus-stricken. The staff, over 50 in number, are entirely women.

WAR MAPS.—We referred in THE LANCET of August 15th, 1914, to Maps 1, 2, and 3, and in that of Sept. 5th, 1914, to Maps 4, 5, 6, and 7 of the excellent series of war maps published by Messrs. Stanford, Ltd., of Long Acre, London, W.C. There have since been published No. 8, the seat of war in Eastern Europe; No. 9, the seat of war in Turkey; No. 10, the seat of war in Armenia; No. 11, the theatre of war in Eastern Europe; and No. 12, the theatre of war in Western Asia Minor. The maps are legibly lettered.

THE LLOYD MEMORIAL (CAXTON) SEASIDE HOME, DEAL.—A dinner will be given, under the presidency of Lord Northcliffe, at the Hotel Cecil, on June 5th, in aid of this home, which, being supported by upwards of 6000 members of the printing and allied trades, has placed at the disposal of the War Office 12 beds for the use of convalescent soldiers enlisted from those trades.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—C. D. Banes (Section I.), King's College Hospital; B. A. Bull (Sections I. and II.), Oxford and St. Bartholomew's Hospital; R. Curle (Sections I. and II.), Guy's Hospital; L. Lee (Section I.), Geneva; J. G. Lewis (Section II.), Durham; H. Morrison (Section I.), St. Mary's Hospital; D. C. Ogilvie (Sections I. and II.), Middlesex Hospital; R. Quesada-Jiménez (Sections I. and II.), Guy's Hospital; W. H. Rhys-Jones (Sections I. and II.), Charing Cross Hospital; J. A. W. Robinson (Sections I. and II.), King's College Hospital; G. S. Stathers (Sections I. and II.), Cambridge and St. Bartholomew's Hospitals; and H. E. P. Yorke (Sections I. and II.), St. Bartholomew's Hospital.

Medicine.—B. A. Bull (Sections I. and II.), Oxford and St. Bartholomew's Hospital; A. Butterfield (Section I.), Durham; J. E. Cheesman (Sections I. and II.), St. Mary's Hospital; R. Curle (Sections I. and II.), Guy's Hospital; H. A. de Morgan (Sections I. and II.), Middlesex Hospital; J. B. Fairclough (Sections I. and II.), Leeds and Guy's Hospital; W. Fox (Section I.), Charing Cross Hospital; L. A. J. Graham (Sections I. and II.), Cambridge and Guy's Hospital; N. Hoffmeister (Sections I. and II.), Middlesex Hospital; L. Lee (Sections I. and II.), Geneva; (J. G. Lewis Section II.), Durham; D. C. Ogilvie (Sections I. and II.), Middlesex Hospital; J. A. W. Robinson (Section II.) and E. E. Samaraweera (Sections I. and II.), King's College Hospital; and H. E. P. Yorke (Sections I. and II.), St. Bartholomew's Hospital.

Forensic Medicine.—G. T. Baker, Middlesex Hospital; A. Butterfield, Durham; L. Lee, Geneva; J. Mitchell, Edinburgh; J. E. Rusby, Leeds; E. E. Samaraweera, King's College Hospital; and H. E. P. Yorke, St. Bartholomew's Hospital.

Midwifery.—A. Z. Absushady, St. George's Hospital; H. Archer, Bristol; J. B. Fairclough, Leeds and Guy's Hospital; W. Fox, Charing Cross Hospital; J. L. Hamilton, London Hospital; H. L. Hughes, St. George's Hospital; L. Lee, Geneva; J. E. Rusby, Leeds; and C. P. C, Sargent and H. E. P. Yorke, St. Bartholomew's Hospital.

The Diploma of the Society was granted to the following candidates entitling them to practise medicine, surgery, and midwifery:—B. A. Bull, R. Curle, L. A. J. Graham, R. Quesada-Jiménez, J. G. Lewis, D. C. Ogilvie, W. H. Rhys-Jones, J. A. W. Robinson, and H. E. P. Yorke.

THE Radcliff Prize at Oxford has been awarded to Dr. Martin William Flack, a former Radcliffe Travelling Fellow and a member of the staff of the National Health Insurance Medical Research Committee.

THE ASSURANCE MEDICAL SOCIETY.—The next ordinary meeting of this society will be held at the House of the Royal Society of Medicine, 1, Wimpole-street, London, W., on Wednesday next, May 5th, at 5.30 P.M., when Sir Thomas Oliver, M.D., F.R.C.P., will read a paper on the Rôle of Traumatism in Disease calling for Compensation. There will be a council meeting at 5 P.M. All communications should be made to the honorary secretaries, Dr. R. A. Young, 57, Harley-street, W., and Dr. Otto May, 65, Harley-street, W.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A reception, at which many ladies were present, was held on the evening of St. George's Day, April 23rd, at the West London Hospital and Post-Graduate College, by the President and Council to meet the members and the Belgian doctors. Dr. Jacobs, Président d'honneur de la Société de Gynécologie de Belgique, gave an interesting address in English on Belgium, Belgian Doctors, and the Germans. Colonel Sir Charles Watson, K.C.M.G., C.B., gave a historical account, illustrated by lantern slides, of the rise and progress of the Order of St. John of Jerusalem up to the present date. Colonel T. H. Hendley, C.I.E., I.M.S. (retired), lectured on War in Indian Art. In the various annexes were exhibited Belgian War Relics, by Mr. H. S. Souttar; War Relics, by Mr. Donald Armour; Skiagrams of Projectiles, by Dr. Reginald Morton; Indian War Pictures, by Colonel Hendley; and War Relics from the Cameroons, by Mr. Leonard Bidwell, R.N., son of the late well-known surgeon and Dean of the West London Post-Graduate College. An excellent programme of music was provided, including a repertoire of Montmartre songs by M. Edouard Garceau.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Mental Treatment Bill.

THE Mental Treatment Bill, which Mr. CECIL HARMSWORTH, the Under Secretary for Home Affairs, has introduced in the House of Commons, is an important measure which has been necessitated by the war. Its object, briefly stated, is "to facilitate the early treatment of mental disorder of recent origin arising from wounds, shock, and other causes." Its text has now been issued. A Memorandum attached to it gives a brief summary of the law and the changes which it is proposed to effect in it.

The Memorandum.

As the law now stands (the Memorandum states) nursing homes cannot receive for treatment patients who are suffering from nervous breakdown affecting their mental condition (Lunacy Act, 1890, section 315 (2)). Such patients can only obtain residential treatment if they are certified insane and sent to an asylum or hospital under the Lunacy Acts. This applies even if the breakdown is of a temporary character and almost certainly capable of being cured. As it is found that a sort of stigma attaches throughout life to a person who has once been certified as insane, there is great reluctance to have such cases certified, and the result is that persons suffering from temporary mental disorder do not receive the special treatment in a nursing home which is suitable to their condition and which is calculated to effect a speedy cure.

The object of the present Bill (the Memorandum proceeds to state) is to secure the proper treatment of such cases by making the law less rigid than at present. It removes the necessity for formal certification in the case of persons suffering from mental breakdown of recent origin and arising from wounds, shock, &c. In this respect it assimilates the English law to the law which has been in force in Scotland for 50 years and which has worked satisfactorily [Lunacy (Scotland) Act, 1866, section 13].

It is brought forward at the present moment in order to meet an urgent need which has arisen in the case of soldiers and sailors invalided from the front, and others whose health has broken down under the stress engendered by the war.

This Bill will enable a man who in the service of his country has suffered a nervous breakdown to accept the treatment without being certified, but only for a period not exceeding six months and under conditions which will provide security against misuse.

The Text of the Bill.

As the provisions of the Bill are important we now quote them in full.

Clause 1, power to receive persons suffering from mental disorder of recent origin arising from wounds, &c., runs as follows: (1) Notwithstanding the provisions in any other Act to the contrary, a person shall not be liable to any penalty for receiving to board or lodge or for taking charge of, whether for payment or not, any person suffering from mental disorder of recent origin arising from wounds, shock, disease, stress, exhaustion, or any other cause, if and so long as he complies with the conditions imposed by regulations made under this Act.

(2) Regulations may be made in England by the Secretary of State with the concurrence of the Lord Chancellor, and in Ireland by the Lord Chancellor of Ireland, as to (*a*) the period, not exceeding six months, for which such a person may be so received; (*b*) the institutions, homes, or houses into which such a person may be received; (*c*) the statements and notices to be furnished as respects a person so received; (*d*) the treatment of persons so received and their visitation, removal to other care, and discharge.

(3) Regulations made under this Act shall be laid before each House of Parliament as soon as may be after they are made, and if an address is presented to His Majesty by either House of Parliament within the next subsequent 21 days on which the House has sat praying that any such regulations may be annulled, His Majesty in Council may annul the regulations, and they shall be thenceforth void, but without prejudice to anything previously done thereunder before the expiration of the said period, and the regulations made under this Act shall have effect as if enacted in this Act.

Clause 2 (short title, extent, and duration) reads:—(1) This Act may be cited as the Mental Treatment Act, 1915. (2) This Act shall not extend to Scotland. (3) This Act shall continue in force during the continuance of the present war and for a period of six months thereafter and no longer, except that, as respects persons who at the end of the said period of six months are receiving treatment under this Act, it shall continue in force so long as they continue to receive such treatment.

The Position of Territorial Medical Officers.

Attention should be called to the statement made in the debate on War Office Estimates by Mr. H. BAKER, the Financial Secretary to the War Office, in regard to the position of medical officers of the Territorial Force. Reference was made in the course of the discussion to the sacrifices of these gentlemen in leaving their practices and to the less favourable conditions which were given to them as compared with those afforded to medical men who had accepted temporary commissions in the Royal Army Medical Corps. Mr. BAKER said that something should be done with regard to promotions, and the question of a gratuity, such as had been offered to medical officers specially enlisted after mobilisation on the outbreak of war, was also under consideration. He hoped that the question would shortly be decided. During the debate a high tribute to the excellence of the medical service in the war was paid by Mr. TENNANT, the Under Secretary for War.

Treatment of Prisoners of War in Germany.

Debates took place in both Houses of Parliament on Tuesday, April 27th, on the subject of the ill-treatment of British prisoners of war in Germany. That country, to use the words of Lord KITCHENER, has stooped to acts which will surely stain indelibly her military history and vie with the barbarous savagery of the Dervishes of the Soudan. "I think it is only right and fair to say," proceeded the Secretary of State for War, "that the German hospitals should be excepted from any charges of deliberate inhumanity. There have been indications of a lamentable lack of medical skill, and, in individual cases, of neglect and indifference to suffering on the part of hospital orderlies. On the other hand, there are statements from prisoners who have been released as incapacitated that their experiences in hospital had not formed any ground for special complaint."

In the House of Commons Mr. J. M. HENDERSON, who has taken a personal interest in this matter, said that his experience in regard to wounded prisoners pointed to good treatment in German hospitals. He knew of four cases of soldiers who received dangerous and difficult wounds, which had taken months to heal, but they had been healed. The greatest pains, assiduity, and care had been devoted to them by surgeons in German hospitals, and in each one of those cases it would have been a very easy thing to lose a limb. Not one had lost a limb and all were convalescent at the present moment.

The position which the debate revealed in regard to unwounded prisoners who were confined in camps in Germany was, on the contrary, very painful. The PRIME MINISTER characterised it as a horrible story and one of the blackest spots on the records even of German methods of warfare.

HOUSE OF COMMONS.

WEDNESDAY, APRIL 21ST.

Tinctures and the Spirit Duty.

Mr. BRIDGEMAN asked the Chancellor of the Exchequer whether he had reconsidered the question of giving an exemption from spirit duty to hospitals using a large quantity for tinctures in surgical work; and whether there was any reason why any such exemption could not be given to hospitals without also giving it to doctors and chemists.—Mr. LLOYD GEORGE replied: I am considering the honourable Member's suggestion.

Certification for Sickness Benefit in Ireland.

Mr. GINNELL asked the Chancellor of the Duchy what independent medical approval, if any, the Irish Insurance Commissioners had for the treatment of the sick which their different system of certification involved; and to what cause, except inability to get such approval, their failure was due in a matter of which both the sick and the medical profession complained.—Mr. ACLAND (on behalf of Mr. MONTAGU): My right honourable friend fears that he is unable to add anything to the full replies already given on this subject; but he may say that the question of revising the present arrangement is under consideration, and he will be happy to inform the honourable Member of the progress of the negotiations.

Medical Officers of the Territorial Force.

Sir FRANCIS LOWE asked the Financial Secretary to the War Office whether a doctor joining the Territorial Forces, although he might be of superior rank, got a much lower rate of pay than a doctor who joined Kitchener's army; and, if so, what was the reason for this inequality.—Mr. H. BAKER wrote in reply: It is true that certain civilian medical practitioners commissioned as temporary lieutenants R.A.M.C. received a consolidated rate of pay which is slightly higher than the amount of pay and allowances received by a captain of the Regular or Territorial Force R.A.M.C. It is sometimes necessary to give higher rates to those commissioned on emergency.

THURSDAY, APRIL 22ND.

Medical Officers of the Territorial Force.

Mr. WALTER GUINNESS asked the Financial Secretary to the War Office whether, in view of the sense of injustice caused by the increased rates of pay now given to medical men joining the Royal Army Medical Corps as lieutenants for the period of the war, all lieutenants in the Royal Army Medical Corps, Territorial Force, who were called out on mobilisation and who were now serving on 10*s.* a day less pay than men now joining at the same rank, might at once be promoted to the rank of captain, as had recently been done in the case of all lieutenants in the Regular Royal Army Medical Corps.—Mr. H. BAKER answered: The position of these officers is now under consideration. I may add that the difference in emoluments is not as suggested by the honourable Member.

Mr. W. GUINNESS: Is the honourable gentleman aware that the medical officers of the Territorial Force made great financial sacrifices and had to leave valuable practices at a moment's notice; and is he further aware that those medical officers are much older than officers of corresponding rank in the Regular Army Medical Corps, and naturally cannot look forward to a sufficient length of embodied service to qualify for a pension?—Mr. H. BAKER: I quite agree with the honourable gentleman that they have made great sacrifices, and the case is under consideration.

Indian Medical Service.

Sir PHILIP MAGNUS asked the Under Secretary of State for India whether he was aware that a number of officers in the Indian Medical Service, now actually serving in France with the field ambulances of the Indian Expeditionary Force, were drawing unemployed pay; and whether he would take steps at an early date to discontinue the arrangement under which many officers on active service were classed as unemployed and paid at the unemployed rate.—Mr. CHARLES ROBERTS replied: Unemployed pay is a somewhat misleading term. The salary of an Indian Medical Service officer holding a specific appointment is made up of grade pay and staff pay. Unemployed pay is the rate of pay allowed to a junior officer who has not yet obtained a specific appointment and is higher than the grade pay which he would otherwise receive. Under Orders recently passed all Indian Medical Service officers of two years' service and a good many others will, while on active service, receive as a minimum a rate of pay somewhat in excess of unemployed pay.

Sir P. MAGNUS: Will the honourable gentleman inquire as to why members of the Indian Medical Service are complaining very strongly of disabilities in many directions as compared with British medical officers, and will he take some steps to remedy this grievance?—Mr. C. ROBERTS: This is a technical matter. I should be very glad to look into it with the help of the honourable Member.

Mr. RAWLINSON: Will there be an opportunity given to discuss this question any time during the next few weeks? It is rather pressing.—Mr. C. ROBERTS: I shall see.

The Appointment of Dentists to Camps.

Mr. BRIDGEMAN asked the Financial Secretary to the War Office whether any appointments as dentists to the proposed camp at Park Hall, Oswestry, had been made, and if so, who were the dentists appointed and by whom had the appointments been made.—Mr. H. BAKER wrote in reply: No appointments have been made by the War Office, but the local military authorities have full power to employ local dentists should their services be necessary.

The Work of the Royal Army Medical Corps at the Front.

In the course of the debate on Army Estimates in Committee of Supply,

Mr. TENNANT (Under Secretary for War) said: When you consider the kind of warfare which we have been waging, and particularly when you consider the kind of weather in which it has been waged, the health of the troops has been remarkable. All epidemic diseases, such as measles or enteric fever, have been so brought under control as to enable us to circumscribe their area and to localise them at the earliest possible moment, whilst special illnesses to which the troops were particularly prone, such as frost-bite, have been so treated in the early stages that where actual prevention has not been effected, recovery in the shortest possible time has been general. To this the Field-Marshal Commanding-in-Chief has drawn attention in his latest despatch. I have before now laid special emphasis upon the sanitary arrangements of the responsible officers in the Royal Army Medical Corps. Again I would say that nothing could exceed the efficiency of the precautions they have taken or of the corps itself. Indeed, I think the absence of disease is the greatest and most eloquent tribute in their praise. To those who have knowledge of the diseases of warfare, when I mention this fact that there is not a single case of dysentery amongst our troops, it will be agreed, I think, that is one of the most significant things anyone can say. It is the same with regard to the arrangements for the care of the wounded, bringing them from the scene of active operations in the field to the clearing stations down to the base hospitals, and their transit in motor ambulances or hospital trains from those base hospitals to hospital ships and to this country, the arrangements for the treatment of wounds and disease both in France and at home—all these are subjects of legitimate pride and gratification. It was no uncommon feature of the battle of Neuve Chapelle that the wounded should be back at hospitals in London within 24 hours of their wounds having been received. I had the pleasure of seeing a lieutenant-colonel in one of the Highland regiments who was wounded at Neuve Chapelle, whilst in the trenches, between the hours of 1.30 at 2 o'clock in the afternoon. He became unconscious on receipt of his wound, and he awoke to consciousness soon after 3 o'clock in comfort in a bed in the hospital 11 miles behind the firing line, and with his wounds dressed. I think that is a most remarkable achievement. I mention these facts, which are well known to honourable Members in all parts of the House, because I believe them to be the broad outline of the picture as we see it to-day. I ask honourable Members never to forget that broad outline when they are endeavouring to fit in the details of their criticisms.

In a subsequent passage the Under Secretary said: Now that the rigors of winter may give place to the intensity of summer heat, we naturally are apprehensive that plagues of flies and insects may harass the troops, and we have sent out in order to combat that evil entomologists of world-wide reputation who are now engaged in trying to take such precautionary and preliminary steps as are possible while these creatures are in the larval stage to render the larvæ unlikely to bring forth the insects. At home bacteriologists have gone all over the country and have taken in hand individual cases of cerebro-spinal meningitis, which is a most dangerous disease and might prove a scourge in our ranks. I hope and believe that that difficulty has been successfully overcome.

Sanitary Preparations Urged.

Mr. WALTER LONG said that honourable Members all anticipated that the time was coming when our troops would advance over the country which was now occupied by the enemy. It appeared from all accounts that the condition of that country would be awful. There were now vast numbers of dead bodies, many of which were only partially buried. A great many churchyards had been destroyed by shell fire and dead bodies were exposed and would be exposed, and the general conditions would, he believed, be as awful as they well could be. It was possible, he was told, to take steps which would, if not destroy at all events modify very greatly the risk of the outbreak of a very bad epidemic. Every possible provision should be made in advance so that those evils could be overcome.

Colonel YATE remarked that he had just returned from France, where he had an opportunity of inspecting ambulance trains. The organisation and comfort which had now been introduced into them were deserving of all credit to those engaged in their management. A great many of the railway lines in France were single lines, and consequently the ambulance trains were often side-tracked for hours in order to allow munitions and men to pass up to the front. That was the only drawback, and he wished to say that the medical officers in charge of those trains were deserving of every credit for the way in which they had brought them to such perfection. He was sorry that he could not join with the right honourable gentleman (Mr. Tennant) in giving so much praise to the ambulance wagons. The drivers of these were not very experienced men, and often were rather rough. The way they drove the wounded over cobble stones and bad roads, without thought for the feelings and sufferings of the poor men inside, brought forth pity from those who saw it. It was a question that was very difficult to control. The best was being done possibly, but he did hope some steps would be taken to make those drivers drive as slowly and as comfortably as possible. The honourable and gallant gentleman called attention to the efficient and excellent management of the water ambulances. The ambulance flotilla was now working as a complete hospital with 200 beds, and was complete in every possible way. There were four barges accommodating 50 patients each, and there were doctors, a staff of nurses, an operating theatre, electric light, and all other conveniences. He trusted that as time went on the War Office would be able to introduce those hospital barges in much larger numbers in all the canals in Flanders and Northern France. There was no better way of transporting the wounded from the clearing station to the hospital ships than by barges, and he hoped that method would be largely extended.

Medical Officers of the Territorial Force.

Colonel GREIG raised the question of the position of medical officers of the Territorial regiments. He said many of these appointments had been filled by medical men who had given up large practices in order to go on service. As compared with other medical officers the Territorial medical officer seemed to be treated very badly. The facts were these. His period of service when he joined, for there was no limit, was as long as the authorities liked to keep him. His pay was 14*s*. per diem plus certain allowances. The highest possible amount he could get was 18*s*. 10*d*. per diem. When he started his work he got an outfit allowance of £30 and a camp outfit allowance of £7 10*s*., which everyone who knew about these matters was perfectly well aware did not cover the camp outfit cost. He got no gratuity at the end of his service. He wanted to compare their position with that of men who had joined the Royal Army Medical Corps. There were many cases of pupils who had been trained by present members of the Territorial Medical Corps, and when these Territorial medical officers met their old-time pupils in camp they found their pupils in higher ranks and receiving a very much higher rate of pay. The thing was an absurdity. The two sets of men were doing exactly the same work. Of course, the Territorial medical officers in a large number of cases had taken the Imperial Service obligation. The period of service of medical men who had accepted commissions in the Royal Army Medical Corps was 12 calendar months, or until their services would be no longer required, which presumably would be when the war had terminated. The pay was 24*s*. per diem, being a flat rate with no allowances. Travelling on duty was also paid for by the Government. This officer got an allowance of £30 at the time of joining the service, the same as the Territorial medical officer, but at the end of his service he got £60. It was a matter for consideration whether these two sets of men should not be put on the same footing, and whether the scale of pay of the Territorial medical officers should not be raised to that of the officers of the Royal Army Medical Corps

Mr. FALLE called attention to the position of majors of the Royal Army Medical Corps (Territorial). If these officers were attached to any unit but the medical unit they could not be promoted to the rank of lieutenant-colonel. When he said "could not" he meant that, although it had been done, it was very unusual. He knew one who had been attached to a Territorial regiment for more than 20 years, and he had gone through all the ranks up to that of major, but he had been told that he could not be promoted higher. That did not seem to be fair, considering that newcomers were promptly made lieutenant-colonels and received pay superior to the men who had been over 20 years with their regiments.

Mr. H. BAKER (Financial Secretary to the War Office) said, in the course of his reply to the debate: Reference has been made to the question of the hardships of doctors to the Territorial Forces. Well, they were well aware of the terms of the contract into which they entered, and they have suffered no hardship, but we should all recognise the very great sacrifices, possibly greater than those any other class have made, which these medical officers have made in giving up their practices and giving their services to the State. Something should be done with regard to promotions, and the question of a gratuity such as has been offered to medical officers especially enlisted after mobilisation on the outbreak of war is also under consideration and I hope will shortly be decided.

Tuesday, April 27th.

Promotions in the Royal Army Medical Corps.

Sir Henry Craik asked the Under Secretary for War whether officers of the Special Reserve of the Royal Army Medical Corps were being treated differently from the rest of that corps as regarded temporary promotion, and, if so, upon what grounds that difference was based.—Mr. Tennant replied: Temporary promotion is not given in the Regular Royal Army Medical Corps. In the Special Reserve Royal Army Medical Corps promotion is by time, but it is probable that some promotions otherwise than in respect of a period of service will be made.

Mr. T. M. Healy asked the right honourable gentleman whether the lieutenants of the regular Royal Army Medical Corps had all been promoted captains; and was it the intention of the Government to promote the lieutenants of the Special Reserve Royal Army Medical Corps, who were in the Special Reserve Royal Army Medical Corps before the outbreak of the war, giving them the same seniority as they had at mobilisation.—Mr. Tennant wrote in reply: The lieutenants of the Regular Royal Army Medical Corps have been promoted to the rank of captain to ensure as far as possible a due proportion of that rank to the large number of temporary lieutenants now serving. The position of the Special Reserve lieutenants is different. It is not the intention to promote all of these, but it is probable that the promotions of some will be made.

Medical Service at the Front.

Mr. Robinson asked the Under Secretary for War whether, in view of the strain imposed upon many doctors who had been at the front for several months, he would make use of the services of first-class medical men of the Royal Army Medical Corps now in this country anxious to do duty abroad, and thus relieve for a time those doctors abroad who had been toiling incessantly for months.—Mr. Tennant answered: I imagine that my honourable friend is referring to the temporary commissioned medical officers, and I can assure him that all those who are eligible for foreign service will take their turn at the front.

Sanatorium Treatment for Soldiers.

Sir Henry Craik asked the Under Secretary for War whether provision would be made systematically for the sanatorium treatment of soldiers suffering from consumption or tuberculosis caused by hardships experienced on active service or developed as the result of wounds; whether he was aware that at present such provision was casual only and in some cases entirely wanting, and that offers of accommodation in consumption hospitals had been sometimes accepted and sometimes declined by the Medical Department of the War Office upon no apparent uniformity of principle; and who was responsible for this state of matters.—Mr. Tennant said in reply: I fully recognise the importance of this matter, to which careful attention has been given. The National Health Insurance Commissioners accept the responsibility to secure the provision of accommodation in sanatoriums of all cases of tuberculosis amongst insured soldiers. Instructions to this effect, and as to the procedure to be followed, have recently been issued to all commands. The best method of providing sanatorium treatment for tuberculous soldiers who are not insured is not yet finally settled, but the War Office has taken up and has at its disposal beds in several sanatoriums, and full use has been made of these. Only one offer of a consumption hospital has been refused. This was because the War Office were advised that it was not suitable for military cases.

Wednesday, April 28th.

Medical Consultants to the Admiralty.

Commander Bellairs asked the Secretary to the Admiralty whether any sums of over £3000 a year were being paid to doctors and surgeons in civil life as retainers for their services; if so, in what cases and what amounts; and whether the arrangement was made prior to the war and allowed of private practice as well.—Mr. Macnamara furnished the following written answer: The following consultants are paid over £3000 per annum: Cheatle, G. L., Esq., C.B., C.V.O., F.R.C.S., £5000 per annum; Cheyne, Sir W. W., Bart., C.B., F.R.C.S., £5000 per annum; Johnson, Raymond, Esq., M.B., F.R.C.S., £5000 per annum; Macewen, Sir W., F.R.C.S., £5000 per annum; Rolleston, H. D., Esq., M.D., F.R.C.S., £5000 per annum; Turner, G. R., Esq., F.R.C.S., £5000 per annum. The employment of eight consultants was approved previous to the outbreak of war. The whole time of these consultants is at the disposal of the Admiralty, and they are under similar regulations with regard to private practice as all other medical officers serving—viz., private practice is not forbidden, but must not in any way interfere with the performance of an officer's naval duties.

Spotted Fever in Middlesex.

Sir J. D. Rees asked the Parliamentary Secretary to the Local Government Board whether any cases of spotted fever had occurred in Middlesex; and, if so, whether special attention had been called, in the localities affected, to the circular on this subject issued by the Board.—Mr. Herbert Lewis wrote in reply: Some cases have occurred, and one of the Board's medical inspectors was instructed to confer with officers of the county council and district councils.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Fisher, A. G. T., L.R.C.P. Lond., M.R.C.S., has been appointed Senior Resident Officer at the Bristol General Hospital.

Green, Reginald, M.D., B.S., D.Hy., D.P.H. Durh., has been appointed Deputy Medical Officer of Health for the East Gloucestershire Combined District.

O'Donnell, T., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Northleach District of the county of Gloucester.

Procter, G. W., M.B. Durh., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Garston District of Liverpool.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

Abergavenny, Monmouth County Asylum.—Temporary Assistant Medical Officer. Salary £7 7s. per week, with board, apartments, and attendance.

Anglo-Serbian Hospital, Urnjatchka, Benja, Serbia.—Surgeon.

Birkenhead Borough Hospital.—Female Senior and Junior House Surgeons. Salary £180 and £150 per annum respectively, with board and laundry.

Birmingham General Dispensary.—Resident Medical Officer, unmarried. Salary £250 per annum, with apartments, attendance, &c.

Bolton Infirmary and Dispensary.—Third House Surgeon. Salary £170 per annum, with apartments, board, and attendance.

Bournemouth, Royal Victoria and West Hants Hospital.—House Surgeon for six months. Salary £100 per annum, with board, lodging, washing, &c.

Brentwood Asylum, Brentwood, Essex.—Locum Tenens Assistant Medical Officer. Salary £6 6s. per week, with board, attendance, lodging, and washing.

Bristol, Beaufort War Hospital.—Chief Resident Surgeon. Also Resident Physician and Surgeon.

Bristol General Hospital.—Second House Physician, House Surgeon, Casualty House Surgeon, and Resident Obstetric Officer, all for six months. Salary at rate of £150 per annum, with board, residence, &c.

Bristol Royal Hospital for Sick Children and Women.—Junior Resident Officer. Salary £100 per annum, with board, rooms, attendance, and laundry.

Bristol Royal Infirmary.—Three House Surgeons, Two House Physicians, and One Obstetric and Ophthalmic House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.

Burnley, Victoria Hospital.—House Surgeon. Salary £135 per annum, with residence, board, and washing.

Bury Infirmary.—Senior and Junior House Surgeons. Salary £175 and £150 per annum respectively, with board, residence, and washing.

Buxton, Derbyshire, Devonshire Hospital.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

Cardiff, King Edward VII.'s Hospital.—Resident Surgical Officer. Salary £160 per annum, with board, laundry, and apartments.

Cardiff, Welsh Metropolitan Military Hospital, Whitchurch.—Chief Resident Surgeon and Chief Resident Physician. Salary £1 3*s.* 6*d.* a day, with board, lodging, &c.

Carlisle Non-Provident Dispensary.—Resident Medical Officer. Salary £200 per annum, with apartments (not board).

Carmarthen, Joint Counties Asylum.—Temporary Second Assistant Medical Officer. Salary at rate of £200 per annum, with board, lodging, washing, &c.

Cheshire County Council.—District Tuberculosis Officer. Salary £350 per annum.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—House Physician. Salary as agreed, with board, residence, and washing.

City of London Lying-in Hospital, City-road, E.C.—Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, lodging, and washing.

Derby, Derbyshire Royal Infirmary.—House Physician and Casualty Officer. Salary £250 per annum, with board, residence, &c.

Derbyshire Education Committee.—Temporary Female Assistant School Medical Officers. Salary £400 per annum, inclusive.

East Sussex County Council.—Female Inspector of Midwives and Child-Welfare. Salary £190 per annum.

Epsom, County of London War Hospital.—Chief Resident Physician, Resident Radiographer, and Resident Dental Surgeon. Also, on the Visiting Staff, Physicians and Surgeons to take charge of wards, Operating Surgeons, Ophthalmologist, Aural Surgeon, Dermatologist, and Radiographer.

Epsom, London County Asylum, Long Grove.—Locum Tenens Medical Officer. Salary 6 guineas a week, with quarters, board, and washing.

Folkestone, Royal Victoria Hospital.—House Surgeon. Board, residence, and laundry, and salary as arranged.

Gravesend Hospital.—House Surgeon. Liberal salary, with board, residence, and washing.

Greenwich Union Infirmary and Workhouse.—Junior Assistant Medical Officer. Salary £175 per annum, with apartments, rations, and washing.

Harrogate Infirmary.—Resident House Surgeon. Salary £100 per annum.

Hemel Hempstead, Herts, West Herts Hospital.—Resident Medical Officer. Salary £150 per annum, with rooms, board, and washing.

Hull Royal Infirmary.—House Physician, unmarried. Salary £105 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging. Also Casualty House Surgeon. Salary at rate of £80, with board and lodging.

Indian Medical Service.—Ten Commissions.

Inverness, Northern Infirmary.—House Surgeon. Salary £150 per annum, with board, &c.

Island of Sanday, Orkney.—Medical Practitioner and Vaccinator. Salary £100 per annum.

Liverpool, Brownlow Hill Institution.—Resident Assistant Medical Officer. Salary at rate of £300 per annum, with rations, &c.

Liverpool, Township of Toxteth Park Poor-law Institution and Infirmary.—Assistant Resident Medical Officer. Salary £200 per annum, with board, washing, and apartments.

Lochgoilhead and Kilmorich Parish.—Medical Officer and Vaccinator. Salary £100 per annum.

London Fever Hospital, Liverpool-road, N.—Assistant Resident Medical Officer. Salary £250 per annum, with residence and board.

Manchester Children's Hospital, Pendlebury.—Resident Medical Officer, unmarried, for six months. Salary at rate of £100 per annum.

Manchester Children's Hospital, Gartside-street.—Medical Officer. Salary £180 per annum.

Manchester, County Asylum, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Middlesbrough, North Ormesby Hospital.—House Surgeon. Salary £150 per annum, with board, washing, and attendance.

Mount Vernon Hospital for Consumption and Diseases of the Chest, Northwood, Middlesex.—House Physician. Salary £150 per annum, with board, residence, and washing.

New Hospital for Women, Euston-road, N.W.—Female House Physician, Two House Surgeons, and Obstetric Assistant. All with board, residence, and laundry. Also Assistant Pathologist. Also Resident Medical Officer at House of Recovery, New Barnet, for six months. Salary at rate of £60 per annum. Also Clinical Assistants for Monday and Saturday.

Newport Mental Hospital, Caerleon, Mon.—Temporary Assistant Medical Officer. Salary 5 guineas per week, with board, rooms, and attendance.

Paddington Green Children's Hospital, W.—Temporary Surgeon in Charge of Out-patients.

Prince of Wales's General Hospital, Tottenham, N.—Honorary Dermatologist. Also Deputy Laryngologist.

Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—Temporary Assistant Physician. Salary £25 per annum. Also Temporary Surgeon for Ear, Nose, and Throat Department. Salary £25 per annum.

Rotherham Hospital.—Senior and Junior House Surgeons. Salary £200 and £125 per annum respectively, with board, lodging, and washing.

Royal Dental Hospital of London, Leicester-square, W.C.—Assistant Dental Surgeon.

Royal Free Hospital, Gray's Inn-road, W.C.—Two Resident Medical Officers to Military Block.

Royal National Orthopædic Hospital, 234, Great Portland-street, W.—Resident Medical Officer.

St. Mary's Hospital for Women and Children, Plaistow, E.—Resident Medical Officer and Assistant Resident Medical Officer. Salary at rate of £110 and £90 per annum respectively, with board, residence, and laundry.

St. Marylebone Infirmary, Rackham-street, Notting Hill, W.—Temporary First and Second Assistant Medical Officers, unmarried. Salary £225 and £200 per annum respectively, with apartments, rations, and washing. Also Third Assistant Medical Officer, unmarried, for six months. Salary at rate of £180 per annum, with apartments, rations, and washing.

Salisbury General Infirmary.—House Surgeon and Assistant House Surgeon, unmarried. Salary £100 and £75 per annum respectively, with apartments, board, lodging, and washing.

Samaritan Free Hospital for Women, Marylebone-road, N.W.—Anæsthetist two half days weekly. Salary £15 per annum.

Scarborough Hospital and Dispensary.—Senior and Junior House Surgeons. Salary £100 and £80 per annum respectively, with board, residence, &c.

Sheffield, Ecclesall Bierlow Union.—Resident Assistant Medical Officer. Salary £300 per annum, with board, washing, and apartments.

Sheffield Royal Hospital.—Assistant House Surgeon and Assistant House Physician.

Sheffield Royal Infirmary.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.

Shrewsbury, Royal Salop Infirmary.—House Physician. Salary at rate of £110 per annum, with board and apartments.

Somerset County Council.—Assistant Tuberculosis Officer. Salary £350 per annum.

Somerset County Education Committee.—School Oculist and Medical Inspector. Salary £350 per annum.

South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Female House Surgeon. Salary £150 per annum, with residence, board, and washing.

Stoke-on-Trent, North Staffordshire Infirmary, Hartshill.—Resident Surgical Officer, unmarried. Salary £300 per annum. Also Two House Surgeons and One House Physician, unmarried. Salary in each case £150 per annum, all with board, residence, and laundry.

Swansea Education Committee.—Temporary Assistant School Medical Officer. Salary £300 per annum.

Taunton and Somerset Hospital, Taunton.—Senior House Surgeon. Salary £250 per annum, with board, lodging, and laundry.

Tiverton Hospital, Devon.—House Surgeon and Dispenser. Salary £80 per annum and all found.

Ventnor, Isle of Wight, Royal National Hospital for Consumption and Diseases of the Chest on the Separate Principle.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with board, lodging, &c.

Wakefield, West Riding Asylum.—Locum Tenens or Assistant Medical Officer. Salary as arranged, with apartments, board, &c.

Walsall and District Hospital.—Assistant House Surgeon and Anæsthetist. Salary £150 per annum, with board, residence, and laundry.

Warrington Infirmary and Dispensary.—Junior House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.

Warrington, Lord Derby War Hospital.—Chief Resident Physician and Resident Physician and Surgeon.

West Ham and Eastern General Hospital, Stratford, E.—House Physicians. Salary £120 and £100 per annum, with board, residence, and washing.

Whitehaven and West Cumberland Infirmary.—House Surgeon. Salary £150 per annum, with board, lodging, and attendance.

Wolverhampton and Staffordshire General Hospital.—Resident Medical Officer and House Surgeon for six months. Salary at rate of £150 per annum, with board, rooms, and laundry.

Worcester General Infirmary.—Resident Medical Officer. Salary £150 per annum, with board, residence, and washing.

Worcestershire County Council Education Committee.—Female Temporary Assistant School Medical Officer. Salary £350 per annum.

York Dispensary.—Female Resident Medical Officer, unmarried. Salary £240 per annum, with board, lodging, and attendance.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Kirkwall, in the county of Orkney; and at Cardenden, in the county of Fife.

Births, Marriages, and Deaths.

BIRTHS.

Bolster.—On April 22nd, at Neville House, New-road, the wife of Fleet-Surgeon Bolster, R.N., the Hospital Ship *China*, of a daughter.

Owen.—On April 24th, at St. Mary's-mansions, W., the wife of Dr. Sydney A. Owen, of a son.

Secretan.—On April 24th, at Redlands-road, Reading, the wife of Dr. Bernard Secretan, of a son.

Stobie.—On April 25th, at Banbury-road, Oxford, the wife of William Stobie, M.B. Edin., of a daughter.

MARRIAGES.

Alcock—Rannie.—On April 26th, at St. Peter's, Belsize-park, London, N.W., Lieutenant Benjamin James Alcock, M.D., R.A.M.C., to Mary Donald, youngest daughter of the late Rev. John Rannie, M.A., of British Guiana, and Mrs. Rannie, of Belsize-park-gardens, London, N.W.

Batchelor—Smith.—On April 22nd, at the Parish Church, Eastbourne, T. Brewer Batchelor, Lieutenant (temp.) R.A.M.C., to Florence Hilda, widow of the late S. H. Smith.

Radford—Scott.—On April 23rd, at All Saints' Church, Bombay, Edward Alan Radford, Indian Education Service, to Mary Cowper Scott, M.D., youngest daughter of the late Sir John Scott, K.C.M.G., D.C.L., and of Lady Scott.

Watson—Speight.—On April 26th, at the Cathedral Church of St. Nicholas, Newcastle-on-Tyne, Temporary Surgeon Walter Geoffrey Watson, R.N., to Elsie, fifth daughter of Mr. George Speight, Belmont, Park View-road, Bradford, and of the late Mrs. Speight.

DEATHS.

Barnett.—On April 19th, in camp near Aldershot, Bertram Leeds Thomas Barnett, Captain 12th Division Train A.S.C., and Medical Officer of Health of the County of Ely.

Bradford.—On April 22nd, at Bradford Peverell, Dorchester, Robert Mark Bradford, Lieutenant-Colonel, R.A.M.C. (retired), aged 68 years.

Brown.—On April 24th, at Bournemouth, Tom Morison Brown, aged 42 years.

Bulleid.—On Wednesday, April 21st, at 10, Southwick-street, Hyde Park, W., Edgar George Bulleid, Esq., M.D., President of the Harveian Society, aged 54, only son of the late Dr. Bulleid, of 5, Connaught-street.

Burnett.—On April 14th, killed in action, at Shaiba, Persia, Maurice Burnett, Captain, R.A.M.C.

Edwards.—On April 23rd, at Tanybryn, Mold, North Wales, David Edwards, M.R.C.S., L.R.C.P., J.P., aged 62 years.

Stratford.—On April 20th, at Bourne End, of blood poisoning from a wound received while on active service as Surgeon, near Neuve Chapelle, Lieutenant Ernest Stratford, R.A.M.C., M.R.C.S., L.R.C.P., in his 39th year.

Sutcliff.—On March 12th, at Wittenberg, Germany, from typhus fever, Captain A. A. Sutcliff, R.A.M.C.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

ALCOHOLIC LIQUORS.

THE orders issued by the King and Lord Kitchener have caused a large amount of comment in the press, both editorial and from organisations and societies, as well as from private individuals, and the Chancellor of the Exchequer has been inundated with a gigantic, but invited, correspondence on the subject of taking a special pledge of abstention from alcoholic liquors during the war. The question has many sides—the question of the preservation of the State, the preservation of trade (including that of the licensed trade), the preservation of employment, the saving of life, the saving of time, the saving of money, and the preservation of the public health. Some maintain that if we abolished whisky during the war we should be falling into line with the ban on absinthe in France and on vodka in Russia. The claim is that raw spirits do most harm, especially in the north. This was the opinion of the renowned Dr. Benjamin Rush, whose articles on the use of spirits, published about 1785, are said to have caused the establishment in America of the first anti-spirit association or temperance society. The titles of his writings were: "An Inquiry into the Effects of Spirituous Liquors upon the Human Body, and Their Influence upon the Happiness of Society," 11 pages, published at Philadelphia; and "An Inquiry into the Effects of Ardent Spirits upon the Human Body and Mind, with an Account of the Means in Preventing and of the Remedies for Curing Them." The sixth edition of this was published at New York by C. Davis in 1811, and there were subsequent editions at Boston.

THE DEFINITION OF A CONSULTANT.

To the Editor of THE LANCET.

SIR,—Can any of your readers give me a definition of a consultant? or a short résumé of the rules that are supposed to govern his conduct?

I am, Sir, yours faithfully,
April 23rd, 1915. ENQUIRER.

WOMEN AND THEIR WORK EXHIBITION.

FROM May 1st to 7th, at the Royal Horticultural Hall, Vincent-square, Westminster, an exhibition, organised by the *Daily Express* and under the patronage of Queen Alexandra, Princess Arthur of Connaught, and the Duchess of Teck, will be held with the object of showing what work women are doing, what occupations are open to them, and, incidentally, what work is unsuitable for women as a permanent occupation. It is hoped, also, that ideas will be suggested enabling women to plan for themselves new means of earning a livelihood. The scope of the exhibition will be so wide as to include the rough work of farming and the more delicate manipulation necessary in jewellery making. One exhibit will show a ward of the Middlesex Hospital, lectures will be given by Dr. Elizabeth Sloan Chesser, and invalid kitchens will be shown by Lady Muriel Paget.

AN ANCIENT ROMAN MEDICAL MAGISTRATE.

IN the Italian record of archæological discoveries for the year 1913 Signor A. Neomatini and Signor A. Aurigemma publish an honorific inscription of the year A.D. 213, found near Beneventune, which restores to medical history the name of an ancient Roman physician who practised in that city. His name was L. Staius Manilianus, but he retained also an additional cognomen, that of Acesius, from his grandparents. He was evidently greatly respected by his fellow citizens, for he held the municipal post of *Prætor Cerealis iure dicendo quinquennalis*, and presented a *sparsio* to the populace in acknowledgement of the trust thus placed in him.

A HANGING MATTER.

A CORK correspondent calls our attention to the fact that in the press accounts of the hanging of the Egyptian assassin it is stated that the execution "went off without a hitch"—truly, he says, a queer sort of *hanging*.

URO-HEXOIDS.

THE British Drug Houses, Limited, of 22–30, Graham-street, City-road, London, N., announce that their tablets formerly known as "Urosolvene" are now to be designated as "Uro-hexoids." As was pointed out in an analytical record published in THE LANCET of Jan. 2nd, 1915, this is a combination of hexamine and lithium benzoate used as a uric acid solvent and urinary antiseptic.

THE VALUE OF A UNIFORM.

AT the Free Library of St. Martin-in-the-Fields, Trafalgar-square, notices have been posted outside the building saying that soldiers, sailors, and nurses in uniform can receive facilities and free stationery within on application to the attendant. The first offer should afford encouragement to ask for what is wanted, whatever it may be. We should like to see a similar attitude adopted in other public places. There are few facilities for writing in the ordinary refreshment-room, and a note written by soldier, sailor, or nurse to those at home would often be highly valued by relatives, and in some cases would assist the medical man to sustain those there who are depressed when left long without news of their relatives and friends in the services. The value of the uniform is being more and more shown as a *passe-partout*.

PHOTOMICROGRAPHY.

UNDER this title Kodak, Limited, of Kingsway, London, W.C., have issued, at the price of 3*d*., the third edition of an illustrated pamphlet, forming one of a series, and intended principally for the use of beginners in photomicrography. It discusses the apparatus required, explains the method of illumination, the use of coloured filters, photographic procedure and development, and cognate matters in an expository rather than a scientific style.

B. R.—The Coroners Act, 1887, Section 22, which prescribes the fees which a medical practitioner summoned as a witness at an inquest shall be entitled to receive, provides that where an inquest is held on the body of a person who has died in a public hospital (or other institution specified) the medical officer whose duty it may have been to attend the deceased person as a medical officer of such institution "shall not be entitled to such fee or remuneration." The Act makes no exception with regard to a post-mortem examination performed by order of the coroner, and, therefore, if any fee is paid to the officer as above defined in respect of such examination and of the evidence based upon it, this must be through recognition by the coroner and of those who provide the fees of what is just and right, and not because the witness is entitled by the Act to claim payment.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Mr. G. W. Walker: Some Problems illustrating the Forms of Nebulæ.—Hon. R. J. Strutt: Observations on the Resonance Radiation of Sodium Vapour.—Hertha Ayrton: Local Differences of Pressure near an Obstacle in Oscillating Water (communicated by Lord Rayleigh, O.M.).—Mr. J. H. Brinkworth: Measurement of the Specific Heat of Steam at Atmospheric Pressure and 104·5° C., with a Preface by Prof. H. L. Callendar (communicated by Prof. H. L. Callendar).—Mr. C. F. Jenkin and Mr. D. R. Pye: Thermal Properties of Carbonic Acid at Low Temperatures. II. (communicated by Sir Alfred Ewing).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY.

SECTION OF SURGERY: SUB-SECTION OF ORTHOPÆDICS (Hon. Secretaries—A. S. Blundell Bankart, E. Rock Carling): at 5 P.M.

Annual General Meeting.—Election of Officers and Council for Session 1915–1916.

SECTION OF PATHOLOGY (Hon. Secretaries—Gordon W. Goodhart, C. Price-Jones): at 8.30 P.M.

Annual General Meeting.—Election of Officers and Council for Session 1915–1916.

Dr. Charlton Bastian, F.R.S.: The Importance of Tyrosine as an Aid in the Demonstration of the Present Day *de novo* Origin of Living Organisms.

Dr. Hingston Fox: Aneurysm of Left Ventricle.

THURSDAY.

SECTION OF OBSTETRICS AND GYNÆCOLOGY (Hon. Secretaries—C. Hubert Roberts, Cuthbert Lockyer): at 8 P.M.

Annual General Meeting.—Election of Officers and Council for Session 1915–1916.

Specimens:

Dr. J. Bright Banister: (1) Twisted Omentum Simulating Twisted Ovarian Cyst; (2) Placental Attachment to Fœtal Head.

Dr. T. G. Stevens: Case of Rhabdo-myoma of the Vulva.

Mr. W. Gilliatt: Viscera from Fatal Case of Eclampsia.

Dr. C. E. Purslow: Tubal Pregnancy showing Fœtus undergoing Dissolution.

Short Communications:

Mr. Douglas Drew: Complete Inversion of the Vagina after Hysterectomy (12 years) associated with Vesical Calculus.

Dr. R. Drummond Maxwell: Diphtheritic Stenosis of the Vagina.

Dr. W. Blair Bell: Infundibulin in Primary Uterine Inertia and in the Induction of Labour.

Papers:

Dr. W. Blair Bell: So-called True Hermaphroditism.

Dr. T. G. Stevens: Adenomyoma of the Recto-Vaginal Septum.

FRIDAY.

SECTION OF LARYNGOLOGY (Hon. Secretaries—Cecil I. Graham, W. D. Harmer): at 5 P.M.

Annual General Meeting.—Election of Officers and Council for Session 1915-1916.

In addition to the usual cases and specimens there will be a Special Exhibition of War Injuries and Neuroses which have come under the care of various Members of the Section at 4 P.M.

ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.

MONDAY.—8 P.M., Cantor Lecture:—Dr. D. Sommerville: Foodstuffs. (Lecture II.)

WEDNESDAY.—8 P.M., Dr. A. V. Harcourt: On the Measurement of the Efficiency of Domestic Fires, and on a Simple and Smokeless Grate.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, Society's Rooms, West London Hospital, Hammersmith-road, W.

FRIDAY.—8.30 P.M., Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M. Clinical Lecture.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street Piccadilly, W.

TUESDAY.—3 P.M., Prof. C. S. Sherrington: The Animal Spirits. (Lecture I.)

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 28th, 1915.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
April 22	30·150	N.W.	0·03	90	55	43	41	47	Fine
,, 23	30·166	N.	0·01	83	52	44	43	46	Cloudy
,, 24	30·144	N.E.	...	97	54	38	42	44	Cloudy
,, 25	30·030	W.	...	51	47	41	40	43	Raining
,, 26	30·254	N.E.	...	90	59	41	46	47	Overcast
,, 27	30·216	N.E.	...	103	59	43	44	45	Overcast
,, 28	30·244	N.E.	...	110	69	45	49	54	Fine

The following magazines, journals, &c., have been received:— Birmingham Medical Review, British Journal of Dermatology, American Journal of Rœntgenology, Cornell University Medical Bulletin, Homœopathic Recorder, American Journal of Orthopedic Surgery, Tropical Medicine and Hygiene, Pacific Medical Journal, Psychoanalytic Review, Medical Review of Reviews, Bristol Medico-Chirurgical Journal, Revue d'Hygiène, St. Mary's Hospital Gazette, Mercy and Truth, Annali di Medicina Navale e Coloniale, Malaria e Malattie dei Paesi Caldi, &c.

Communications, Letters, &c., have been received from—

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Y.—Dr. Meredith Young, Chester.

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Remarks
ON
ARTERIO-VENOUS ANEURYSM.

Made at a Symposium[1] on the Subject at Radcliffe Infirmary, Oxford, on March 26th, 1915,

BY SIR WILLIAM OSLER, BART., M.D., F.R.S.,
REGIUS PROFESSOR OF MEDICINE IN THE UNIVERSITY OF OXFORD.

GENTLEMEN,—Better than any other disease aneurysm illustrates how borderless are the boundaries of medicine and surgery. Here am I talking on the most surgical of all its aspects, while very likely not far away a surgeon is practising the best possible prevention against internal aneurysm in giving a syphilitic patient an injection of salvarsan! Aneurysm has been a medico-chirurgical affection ever since some bungling young "minutor" first nicked the brachial artery in performing venesection. One of the earliest and most interesting references in literature is to an instance of this kind. Galen was called in consultation by a young and inexperienced surgeon who had opened the artery at the bend of the elbow instead of the vein, and the blood spurted out "clarus, rubens, lucidus et calidus."

> "I took in the situation at once; there happened to be an elderly physician with me, so we prepared a medicine, viscid, conglutinable, and obstructive, and placing it strongly against the lips of the wound bound over it a soft sponge. The surgeon who had opened the artery wondered, but said nothing. When we went out"—note the professional touch!—"I said to the surgeon that he had opened the pulsating vessel, and charged him not to dress the wound before the fourth day, and not without me."

The cure was complete, and Galen remarks that this was his only successful case of the kind, as in all others aneurysm had followed. This account, taken from Symphorien Campegius "Claudii Galeni Pergameni Historiales Campi, Basilae," 1532, p. 43, is doubtless of the case referred to in the "Methodus Medendi."[2] The only other references to aneurysm in Galen are in the "De Tumoribus praeter Naturam"[3] and in the "De Curandi Ratione per Sanguinis Missionem,"[4] in which he refers to the possibility of gangrene.

HISTORICAL SURVEY.

Rational surgery was one of the gifts of the Greeks, but in the 800 years between Hippocrates and Oribasius few names have survived specially associated with this branch of medicine. Who among us off-hand could recall more than two or three in addition to Hippocrates and Galen? Yet in this period scores of important schools flourished with great teachers of surgery, men honoured in their generation and the glory of their times. As one reads the partial list in Haller's "Bibliotheca Chirurgica" and scans the few golden remains of their writings fortunately preserved by encyclopædists such as Oribasius and Paul of Ægina, the truth of Sir Thomas Browne's remarks comes home: "Who knows whether the best of men be known, whether there be not more remarkable persons forgot than any that stand remembered in the known account of time?" Two of these comparatively unknown men created the surgery of arteries, Rufus of Ephesus and Antyllus, the Cosmas and Damien of Greek surgery.[5]

Rufus of Ephesus.

To generations of practitioners unworthy to hand him ligatures Rufus of Ephesus (Reign of Trajan, early part of second century A.D.) was known by the "pilulæ Ruffi," "the pills I would not be without"—"pilulæ sine quibus esse nolo"—still in the British Pharmacopœia as the pill of aloes and myrrh. In the brilliant Ionian profession of the early days of our era Rufus doubtless had predecessors and teachers, but he stands out a strong, clear figure, a great "magister chirurgiæ," a title justly earned by his remarkable contribution to the surgery of hæmostasis. We know it only through a section in Aetius, a sixth-century physician.[6] Nothing is lacking in a description, which might be transferred to any modern text-book—digital compression, styptics, the cautery, torsion, and the ligature—only I am sorry not to find, as is sometimes said, a description suggestive of arterio-venous aneurysm, though he speaks of the possibility of traumatic aneurysm.

Through the Arabians the name of Rufus was on the lips of every mediæval physician, and we find him among the favourites of Chaucer's well-read Doctor. In one of the earliest and most beautiful of medical manuscripts, the famous "Juliana Anicia Dioscorides" (A.D. 525), of the Vienna Library, he is figured with Galen, Hippocrates, and others.

Antyllus.

Upon the other great surgical figure of antiquity, Antyllus, so blindly has oblivion scattered her poppies, to quote Sir Thomas Browne again, that not a fact of his life is known; yet through the mists of 18 centuries he looms large as one of the most daring and accomplished surgeons of all time. A resector of bones and joints, one of the first to perform tracheotomy, the founder of the surgery of fistula, a successful operator upon cataract, and we may say the creator of the surgery of the arteries—these are among his known achievements. His remains are chiefly in the works of Oribasius, the physician and friend of the Emperor Julian.

Nowhere are we impressed with the note of directness so characteristic of the Greek (see R. W. Livingstone's "Meaning of the Greek Genius," second edition, 1915) as in the brilliant account given by this author of aneurysm, of which he was the first to recognise two forms—one by dilatation, the other following wound of the artery. So far as I can gather, he was also the first to describe the thrill or bruit so characteristic of the latter form. No ancient writer has anything like the same accuracy of pathological description, and you may search the surgical literature for centuries before there is found such a gem as the account of his method of operation still in use, and by which his name has been permanently enshrined. Not finding one in English, I asked Mr. Livingstone, of Corpus Christi College, to give us a complete translation of the fragment.

About Aneurysms (from the works of Antyllus[7]).

There are two different kinds of aneurysms. The one kind occurs when there is a local dilatation of an artery (this

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[1] In which Colonel Dodds-Parker, Major Mallam, and Captain Bevers took part.

[2] Linacre's edition, 1517, f. lxii., v.

[3] Junta, fifth edition, 1576, iii., p. 84.

[4] Ibid., vi., p. 21.

[5] These practitioners, who became the Christian saints of surgery, suffered martyrdom in Cilicia in the third century. In their Western Mother Church, on the Roman Forum, I have seen the little parcel said to contain the instruments with which they performed the most famous operation in hagiological surgery, substitution of the healthy thigh of a just-dead man for one that was gangrenous.

[6] Tetrabiblos, lib. xiv., cap. 51.

[7] Oribasius, iv., p. 52 (ed. Daremberg).

No. 4784.

> was the origin of the name aneurysm or dilatation). The other kind arises from the rupture of an artery and the discharge of the blood into the flesh beneath it. Aneurysms due to the dilatation of an artery are longer than others; those due to a rupture are rounder. In the former there is a thicker layer of tissue; in the latter you can hear a certain crepitation if you press them with your finger; while in aneurysms due to dilatation there is no sound.
>
> It is foolish to follow the practice of the ancient surgeons and decline to treat any aneurysm, but it is dangerous to apply surgical treatment to all types. So we will excuse ourselves from treating aneurysms in the armpit, groin, and neck on the ground that the vessels are large and that it is impossible or dangerous to isolate and tie them. We also decline exceptionally big aneurysms, even if they occur elsewhere. But we will operate as follows on aneurysms in the extremities, the limbs and the head.
>
> If the aneurysm results from dilatation, we will make a straight incision in the skin the whole length of the vessel; then, after separating the edges of the incision with hooks, we will carefully sever all the membranes between the skin and the artery. Then pushing aside with blunt hooks the vein adjacent to the artery, we will expose the dilated portion of the artery on all sides. Next, we will introduce the head of a probe underneath, and, lifting the aneurysm, insert along the probe a needle with a double thread, so that it passes beneath the artery. We will cut the thread at the eye of the needle, making two threads and four ends of thread; then, taking the two ends of one of the threads, we will pass them gently to one end of the aneurysm and tie them with precision. Similarly, we will pass the other thread to the opposite end of the aneurysm, and then tie up the artery, so that the entire aneurysm lies between the two ligatures. Then we will lance the aneurysm with a small incision at its centre; in this way its contents will all be evacuated without any danger of hæmorrhage. Those who tie the artery, as I advise, at each extremity, but amputate the intervening dilated part, perform a dangerous operation. The violent tension of the arterial pneuma often displaces the ligatures.
>
> If the aneurysm originates in the rupture of an artery, isolate with your fingers as much of the aneurysm as you can, including the skin. Then below the isolated part introduce a needle with a double thread of flax or of gut; after passing it through cut it at the needle's eye, forming two threads. Take hold of the two ends of one of these and pass it to the right, there tie it tightly, so as not to slip. Pass the other end similarly in the opposite direction—to the left. If there is any fear of the threads slipping, pass a second needle with a similar double thread through the same spot, intersecting the first thread and crossing it in the form of the letter χ (chi). Cut the threads as before, and tie them like the first ones, so that four threads form the ligature. Then open the tumour at its top, and, after evacuating the contents, remove the superfluous skin, leaving the part tied by the threads. In this way the operation is effected without hæmorrhage.

And I must read Mr. Livingstone's comment:—

> It certainly is a beautiful piece of lucid writing. I felt that if I was alone on a desert island with someone suffering from aneurysm, and the tide had washed ashore sufficient *ἄγκιστρα*, &c., that I shouldn't have minded trying the operation. And Antyllus had real literary power. What an admirable phrase is *ἐκπτύεται*, the "spitting out" of the ligature by the throbbing artery: I don't think you can get it in English, and I fell back on a lame substitute, "displaces."

Not unjustly does Paul Broca in his great monograph, "Des Anévrismes," claim that not only did Antyllus create operative medicine but the pathology of aneurysm: "À chaque ligne on reconnait l'écrivain qui parle de ce qu'il a vu, de ce qu'il a fait."

Decay and Revival of Vascular Surgery.

Aetius in the middle of the sixth century describes the method for cure of aneurysm at the elbow, known later as that of Anel (1710), ligation of the brachial artery three or four fingers'-breadth below the axilla, followed by opening the sac, which was allowed to heal by suppuration. A curious error of Sprengel has led to the connexion of the name of Philagrius, a fourth century surgeon, with this operation. In the fragments of this writer given by Aetius aneurysm is not mentioned, but Sprengel never noticed that the extract on aneurysm which follows directly after one upon ganglion by Philagrius did not belong to this author but to Aetius himself.

A casual perusal of the fragments of the Greek surgeons of the first three or four centuries of our era as given in Gurlt's "Geschichte der Chirurgie" gives the impression of a great and fruitful period with scores of men whose qualifications were those demanded by Thomas Fuller for the good operator—the eagle's eye, the lion's heart, and the lady's hand. Then came the tragedy, the death in the West of the science of the Greeks. The Church took over their philosophy, the Arabs absorbed much of the best of their medicine and added to it, but surgery as a progressive science and a successful art died with its founders, the great Greeks of the Græco-Roman Empire. So far as the surgery of arteries is concerned we might take a jump of a thousand years or more were it not for an Arabian, Albucasis of Cordova (tenth century), who wrote a famous surgical treatise, of which we have in the Bodleian the two earliest manuscripts. A young scholar of Wadham and student of Christ Church, John Channing, in 1778 issued from the Clarendon Press a beautiful edition. The description which he gives of aneurysm with its treatment is practically that of Antyllus. He notes the stridor to be felt, which indicates that he was probably dealing with the arterio-venous form.

In vascular surgery the men of the Middle Ages and of the Renaissance, Henri de Mondeville, Guy de Chauliac, and even Ambroise Paré, were blind followers, who never even approached the position of their masters. Not much more than a century has passed since men of the John Hunter type took up vascular surgery where Rufus and Antyllus had left it, and only to this generation of experimental surgeons, such as Eck, Ballance, Matas, J. B. Murphy, Halsted, Carrel, and Guthrie, could the best of the Greeks go to school. You may think perhaps, that I am scarcely just to the great mediæval surgeons, particularly to such a master as Ambroise Paré, who reintroduced the ligature, but in vascular surgery, the touchstone of the position of the art, they never wholly regained what the profession had lost.

Our modern knowledge dates from William Hunter, in whose "Medical Observations and Enquiries,"[8] in a paper on Aneurysm of the Aorta he asks, "Does it ever happen in surgery when an artery is opened through a vein that communication or anastomosis is afterwards kept up between the two vessels?" He then describes, in a case following bleeding, the swelling, enlargement of the veins, and "a tremulous jarring motion" strongest at the part that had been punctured. In a subsequent paper, 1761,[9] he described two cases very fully, and recognised the enlargement of the arteries and of the veins and the characteristic hissing noise "as if there was a blast of air through a small hole and interrupted, answering precisely and constantly to the stroke of the heart or diastole of the artery."

It is true that in the seventeenth century Sennertus, the distinguished Wittenberg professor, noted in this form of aneurysm the characteristic thrill which he compares to the boiling of water, "quasi bullientes aquae," not only palpable but audible, as if the vital spirits were passing through a narrow orifice.[10]

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[8] London, vol. i., 1757.

[9] Further Observations upon a particular Species of Aneurysm, Medical Observations and Enquiries, London, 1761.

RARITY OF ARTERIO-VENOUS ANEURYSM.

It is remarkable how few specimens of arterio-venous aneurysm of the external vessels are in the museums of this country. I have only been able to get references to some half dozen cases. One is astonished not to find any in the Army Medical Museum, Millbank, or at Haslar or Greenwich. Nor is there an example in William Hunter's Museum at Glasgow. The Royal College of Surgeons of England has only three, including a recent uncatalogued one sent by Sir G. H. Makins. Its most remarkable specimen was sent in 1867 by Dr. Beaumont, of Toronto, an old teacher of mine. I was not a little surprised and greatly pleased to find a pathological memorial of this fine old St. Bartholomew's man, a fellow pupil of Paget, who went out to Toronto in the early "forties" and became professor of surgery in the newly founded King's College. It is an admirable specimen as illustrating the late changes in the veins. The case is fully described by Beaumont in the *Medical Times and Gazette* for July, 1867. A man, aged 45, had 11 years previously been stabbed in the upper part of the thigh. There was a very large pulsating tumour in the upper part of the right thigh, fully six inches in extent in either direction and extending nearly to Poupart's ligament. The patient died under chloroform, which was administered for the purpose of ligaturing the external iliac artery. The specimen shows a venous sac as big as a small cocoanut, measuring 14½ by 12½ inches, very thin walls containing some old laminated fibrin, and the walls were in places calcified.

The truth is, this is not a country of brawls and dirks, and pistol wounds are rare in civil life. It is strange that no specimens found their way to the museums from the South African War. The Army Medical Museum, Washington, has only two examples (Lamb).

The rarest of all forms, arterio-venous aneurysm, is occasionally met with in the medical clinic as when a small aortic aneurysm opens into the superior vena cava, while on the surgical side trauma is responsible for 99 per cent. of those connected with the external vessels. Until the recent wars stab wounds accounted for the large majority of cases, but in the Japanese, the South African, and the Serbian wars the high-velocity bullet heads the list of causes.

PERSONAL EXPERIENCE OF WOUNDS OF ARTERIES.

Naturally, as a physician my experience with wounds of arteries has been very limited—until recently only 10 cases, in 5 of which arterio-venous aneurysm followed. The other 5 cases came in medico-legal post-mortem work in Montreal, and they may be just mentioned for their interest.

1. A soldier during the vaccination riots in Montreal gave a man a prod with his bayonet, which passed through the top of the left lung and cut the subclavian artery just as it leaves the arch to curve over the pleura.
2. A man in a brawl received a stab with a penknife at the root of the neck, followed by a traumatic aneurysm, which was operated upon unsuccessfully; the tip of the knife had cut the vertebral artery between the lateral processes of the fifth and sixth cervical vertebræ.
3. A man received a blow on the head in a tussle, and some days later died suddenly of hæmorrhage from the nose; a fracture of the sphenoid was found with laceration, or erosion, of the internal carotid just where it turns into the sella turcica.
4. A man in riding jerked against the pommel of his saddle and drove a dirk which he was carrying into his femoral artery.
5. A fatal bullet wound of the left internal iliac artery.

The arterio-venous cases I will quote in connexion with their most striking features. Within a few months I have seen as many instances as in 40 years of hospital work: two cases at the American Hospital, Paignton, in one of which Dr. Beal did a successful Antyllus operation; a patient of Mr. R. B. Wright at Chester, to whom I shall refer in connexion with the physical signs; and the two patients we have the opportunity to study to-day—for one we are indebted to the kindness of Captain Mowat, of Sheffield, the other is under the care of Major Ernest Mallam at the base hospital.

Exhibition of Two Cases.

W. W., aged 28, a private, had served in the Northumberland Fusiliers for eight and a half years, was always well and strong and never had a serious illness. On Oct. 19th at about 11 A.M. at La Bassée he received three shrapnel wounds, one in the left thigh. Was in the trenches until 7 P.M. Lost an enormous amount of blood. The fragment entered the left thigh just 3 inches below Poupart's ligament, and the piece is still in the leg. There was a great deal of swelling and a good deal of disability at first. The leg did not change in colour, but he was very weak from loss of blood. The wound did not suppurate. Captain Mowat noticed the swelling in the left leg and felt the murmur. He was at Sheffield from Oct. 23rd to Dec. 10th, and gradually got well. Captain Mowat took a remarkable phonograph record of the murmur, which I heard a few weeks ago at Sheffield.

Now the man is healthy-looking, of good colour; he limps on the left leg; there is no swelling or discolouration. The left thigh looks a little smaller than the right, particularly in the antero-lateral region. There is a healed wound just 3 inches below Poupart's ligament in the lower end of Scarpa's space, where there is a diffuse swelling not very marked, and then a little groove-like wasting in the line of the femoral artery. The greatest prominence is at the site of the entrance of the bullet. The pulsation is diffuse, but does not extend above Poupart's ligament. The veins are not greatly distended, but the internal saphenous is visible, and those on the left side are larger than on the right.

On palpation the characteristic thrill is felt of maximum intensity over the injury, and it is felt down the course of the femoral. There is a slight firm induration just beneath the scar, but not a definite tumour. Pressure on the femoral stops the pulsation at once. The thrill is felt above Poupart's ligament. There is no pistol-shot sound to be felt. Pulsation in the popliteal and tibials not palpable. On auscultation a machinery murmur of extraordinary intensity is heard of maximum intensity at the site of the injury, propagated down the femoral, heard in the popliteal. The arteries are not sclerotic and the heart sounds are clear.

Major Mallam's case is an exact counterpart.

Bullet wound of the thigh on Dec. 30th, passing through Scarpa's space. Much blood was lost, but the orifices of entrance and exit healed rapidly. A large effusion of blood in the upper region of the thigh at first masked the nature of the lesion, and it was not until the swelling subsided that the characteristic signs of arterio-venous aneurysm were noted. There are now moderate swelling in Scarpa's space, pulsation palpable, thrill felt with greatest intensity at the point of maximum impulse, and a loud machinery murmur.

ANATOMICAL VARIETIES AND RESULTING CHANGES.

We need not take time to discuss the anatomical varieties which are all modifications of two types, the simple tangential opening between an artery and a vein—aneurysmal varix, and the formation of a sac communicating with both vessels—varicose aneurysm. The accompanying diagrams (Figs. 1 and 2) from Lexer's "Handbuch der allgemeinen Chirurgie" show all possible forms.

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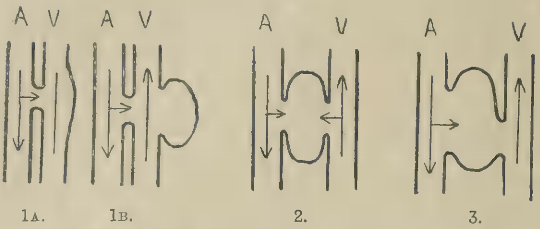
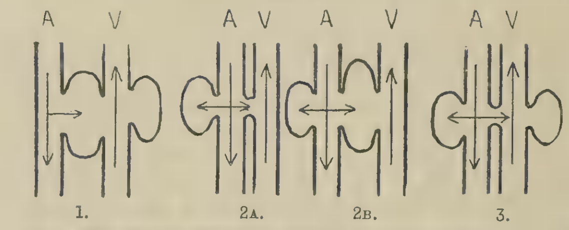
[10] Opera, Ludg., 1676, p. 51.

FIG. 1.



1. Arterio-venous fistula without (1A) and the same with (1B), a venous sac—varix aneurysmaticus. 2. Arterio-venous aneurysm with false intermediary sac—aneurysma varicosum. 3. Arterio-venous aneurysm with arterial sac. Secondary arterio-venous aneurysm.

FIG. 2.



1. Arterio-venous aneurysm with false intermediary sac and varix on outer side of vein, due to double injury of the latter. 2. Arterio-venous aneurysm with immediate communication (A), or with false intermediary sac (B), and with a false arterial aneurysm, due to a single venous and double arterial injury. 3. Arterio-venous fistula with opposing sacs, due to a double injury of both vessels.

The changes that follow are: (1) The blood current is reversed, to a certain extent, in the veins; (2) the blood pressure is increased in them; (3) their walls become arterialised; and (4) the blood pressure in the artery is heightened on the proximal and lowered on the distal side of the lesion. In smaller vessels very slight changes occur. I show you a drawing of an aneurysmal varix of the anterior tibial vessels from a case in the Strassburg clinic, in which a year after the accident the vein was little if at all dilated. In lesions of the vessels of the neck and arms the venous stasis is much less than in the legs, in which the effect of gravitation is so felt that year by year the changes become more pronounced, until, as in the photographs I show, large varicosities and sacculi are formed. Femoral and popliteal arterio-venous aneurysms may last for years without great involvement of the veins, but in a majority of the cases venous stasis forms the most serious sequel of the disorder.

The changes in the arteries on the proximal side of the lesion are less striking, but sooner or later sclerosis occurs with dilatation, and sometimes with saccular aneurysm opposite the orifice of communication. Even within two months of the injury the femoral artery may be felt to be larger and with stronger pulsation (Paignton case). Remote effects on the general circulation are rare, particularly in aneurysms of the vessels of the head and arms. One of my patients (Case 3) died from heart disease which may have had some connexion with his long-standing lesion. In the leg progressive dilatation of the vessels may lead to serious effects. In the case of Captain Mosher,[11] wounded in the middle of Scarpa's space 1898, at the time of death (1911) the dilated arteries extended from the bifurcation of the common iliac to the lower third of the thigh. Hypertrophy of the heart followed, and death from progressive failure of the circulation.

PHYSICAL SIGNS.

In no form of aneurysm are the physical signs so distinctive. *Inspection* may not show much, as in the cases you have just seen: diffuse pulsation at the site of the communication, moderate swelling, but not necessarily any early venous engorgement. In the carotids, subclavians, and axillaries the condition may persist for years without much swelling or great enlargement of the veins. On the other hand, in the form that was so common at the bend of the elbow in venesection days the circulation is much interfered with. Even in smaller vessels such as the occipital the venous swelling may be enormous, as in a patient operated upon by Dr. Cushing at the Johns Hopkins Hospital in 1905. This case illustrates, too, the progressive nature of the lesion, as year by year the vessels on the side of the head grew larger, and after seven years they formed a large pulsating mass which had to be resected, after ligation of the external carotid artery.[12] In the leg, particularly in the situation in the cases you have here seen, venous engorgement sooner or later dominates the scene, and after some years the appearance may be very remarkable, as in the following case.

CASE 1. *Illustrating the development of enormous venous sacculi.*—The patient, aged 31, was shown at the Johns Hopkins Hospital Medical Society on Jan. 16th, 1905. In his eleventh year he had a knife wound just above the right knee; not long after pulsation was noticed along the femoral artery, with marked swelling. He has had good health, with very little disability, except from the increasing varicose veins, which sometimes burst and caused troublesome bleeding. The leg presented a very remarkable appearance, as shown in Figs. 3 and 4. The superficial veins were everywhere varicose; those of the antero-lateral aspect of the thigh were of enormous size, extending into the flank, and many of them were filled with thrombi. The course of the femoral, particularly in Scarpa's space, was occupied by a prominent pulsating tumour, the outline of which can be just seen in Fig. 4. Over this there were an intense thrill and a loud humming murmur with systolic accentuation; pulsation was everywhere forcible. Above Poupart's ligament, lifting the entire iliac fossa and extending into the hypogastrium, was a second tumour, in which the pulsation was very strong, a marked thrill, and the same loud murmur. The size of the tumour, which extended fully 8 inches transversely, can be well seen in Fig. 4. It increased in the sitting posture. The patient said this had been present for many years, but had, he thought, increased in size. It felt very solid and firm and the pulsation was extensile and strong. His only serious disability was from the varicose veins.

The tumours both above and below Poupart's ligament were huge venous sacs. When I demonstrated this case a doubt was expressed whether these really could be venous sacs, but there are many specimens, as in the one I refer to of Dr. Beaumont, and cases are recorded showing a similar condition. A recent one was reported by Eisenberg[13] of a man, aged 65, wounded 18 years before in the thigh, and in addition to great dilatation of the femoral vessels there was a sac 3 inches in diameter of the iliac vein above Poupart's ligament. Additional features that may be noticed on inspection are the increased size of the limb; an actual increase in growth has been noted by Broca in the young; the skin may be much rougher, covered with a thicker growth of hair, and in long-standing cases varicose ulcers are common.

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[11] Reported in Lagarde's Gunshot Injuries, 1914, p. 281.

[12] Journal of the American Medical Association, Dec. 23rd, 1905.

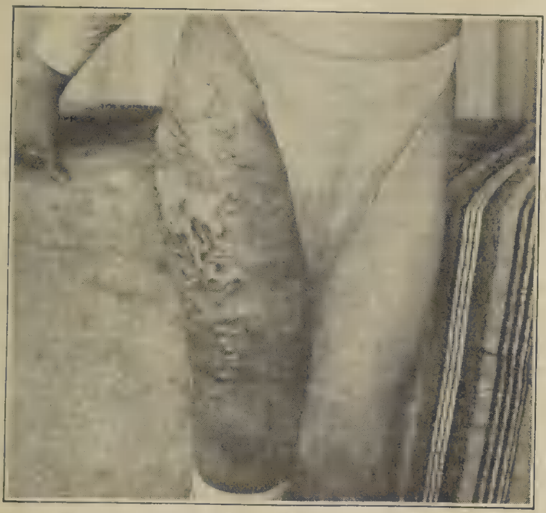
[13] Ibid., Dec. 13th, 1913.

On *palpation* the characteristic thrill is felt, vibratory, rough, continuous, and increasing in intensity with the diastole of the artery. Except in its roughness it is quite unlike any other thrill felt in cardio-vascular lesions, and is pathognomonic. It has an interest, too, as one of the oldest of recognised physical signs, having been described by Antyllus. While of greatest intensity at the site of the lesion, it may be widely diffuse and even felt at the finger tips in an axillary or brachial aneurysm, and at the toes in a femoral. In the patient seen with Mr. Wright[14] at Chester a few weeks ago, there was an additional physical sign which I have never before noted, nor in looking pretty carefully through the literature do I see it mentioned—a pistol-shot sound of great intensity, exactly such as one feels and hears in aortic insufficiency. It was an arterio-venous aneurysm of the popliteal vessels caused by a bullet wound on Jan. 29th. The note which I dictated was:—

> On palpation an intense vibratory thrill, continuous, with diastolic intensification, is felt over the area of pulsation, not below the middle of the leg. The striking feature is the pistol-shot shock felt during the diastole of the vessel, exactly resembling that which one hears and feels in the femoral in aortic insufficiency. It is felt only over the area of pulsation, not in the femorals, and there is no valvular disease. In addition, one feels the strong, firm, aneurysmal pulsation.

In the second case at the American Hospital, Paignton, there was no pistol-shot sound over the popliteal tumour, but one of great intensity could be heard, without the slightest pressure, over the femoral artery. On the other side it could be brought out only with pressure of the stethoscope.

FIG. 3.

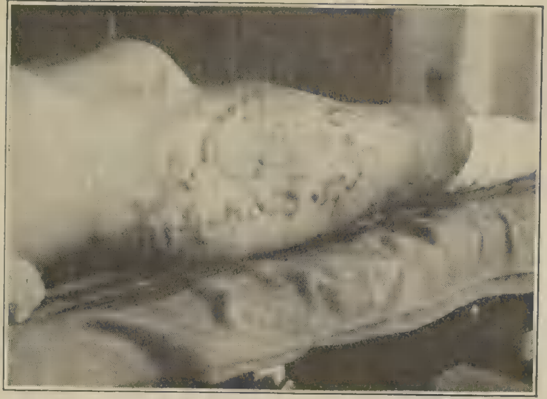


CASE 1.—Arterio-venous aneurysm of the femoral vessels of 20 years' standing.

In the early stages the tumour may not be large, or where it is simply an aneurysmal varix little or no swelling may be present. If there has been effusion of blood the tumour, as in Major Mallam's case, may diminish considerably in size. Subsequently the diffuse swelling may be largely venous, but a circumscribed tumour may be either sacculi in connexion with the vein or artery, or sacculi at some distance from the original site of the injury, and there is not infrequently aneurysmal dilatation of the artery above the lesion.

On *auscultation* the second characteristic physical sign is heard—a loud, rough, humming-top murmur, continuous, with marked intensification during the cardiac systole. During distension of the vessel the murmur is rough, harsh, and vibratory; during its contraction it has a graver, deeper quality. It may be widely diffused, heard up and down the vessels even to the finger-tips in the brachial and axillary aneurysms, and to the toes in the femoral. It may even be intense enough to be heard at some distance from the site of the aneurysm.

FIG. 4.



Same patient as Fig. 3, showing the varicose veins and two huge venous sacculi, one above, the other below, Poupart's ligament.

Practically these are the three great physical signs of arterio-venous aneurysm: the dilatation of the veins, the thrill, and the murmur. Other minor features may be mentioned—absence or lessened pulsation below the site of the tumour, the remarkable influence of posture on the venous engorgement, the pulsation in the peripheral distended veins, the frequency with which phleboliths and thrombi may be felt.

COLLATERAL CIRCULATION.

From the surgical standpoint it is important to determine the adequacy of the blood-supply beyond the lesion. Recumbent the legs, for example, may look alike, but within a few minutes after assuming the erect posture the one on the side of the lesion may become dusky in colour, and the veins dilate. It is not easy to determine the blood pressure in the arteries below the lesion. Korolkow uses a modified Gärtner's tonometer, and Matas lays down the rule:—

> If the peripheral blood pressure is shown by the manometer (a modified Gärtner's tonometer) to be normal or well sustained after compression of the main trunk above the aneurysm then the obliterative operation may be safely applied. If, on the other hand, the blood pressure falls to zero it is evident that the collateral circulation is inadequate, and that no chance should be taken with the obliterative operation or with any procedure whatever (ligature, extirpation, &c.) which would permanently occlude the parent artery.[15]

Another test is after application of an Esmarch bandage apply pressure on the artery above the aneurysm, and note the state of the circulation and the time taken for the skin vessels to fill. In one of the Paignton cases (popliteal) in the sound leg it took three minutes to obliterate the anæmia caused by the bandage while the femoral was compressed above Hunter's canal, but in the affected leg the skin vessels of leg and foot were filled within a minute! The femoral artery on this side felt larger and had a much more powerful pulsation.

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[14] On March 26th Mr. Wright operated, tying the artery above and below and closing the direct orifice into the vein. There was no sac. The vein was unusually large.

[15] Keen's Surgery, vol. v., p. 273.

RESULTS.

Left alone, what becomes of these cases? Much depends upon the position of the aneurysm. Those in the upper extremities are more favourably situated than in the lower. The following may happen:—

Non-Intervention followed by Good Results.

1. The aneurysm may remain unchanged for years and interfere little, if at all, with the patient's health and vigour. Particularly is this the case with the cervical and axillary vessels. Case 3 of my series illustrates this in a remarkable way, as for years he rowed in races and lived a very athletic life. Case 2 also illustrates the wisdom of non-intervention.

CASE 2.—On April 9th, 1900, Dr. Alderson sent me from Russelville, Kentucky, a man, aged 29. On the night of Jan. 5th he had received four bullets, one in the left shoulder, one in the back of the left arm, one in the left lower axillary region, and the fourth, the important one, entered the middle of the fold of the left trapezius muscle, passed inwards and downwards in front of the spine, and came out under the right clavicle. All the wounds healed rapidly, but at first he had some difficulty in swallowing. The right supraclavicular fossa was occupied by a pulsating swelling extending for about 7 cm. upwards and outwards. There were a marked thrill and a loud humming-top murmur with systolic intensification, which was heard up the neck and down the vessels of the arm. The bullet could be felt just below the clavicle. The tumour had increased, and the question was whether it was safe to leave him alone. This was the policy I urged strongly. Twice he narrowly escaped operation. Two years afterwards I heard from him and he remained well; the tumour was somewhat smaller, but the bruit was still a little troublesome. Five years after the accident I heard again. He had remained well, the tumour had not increased in size, and he was able to use his arm and do everything.

Spontaneous Healing.

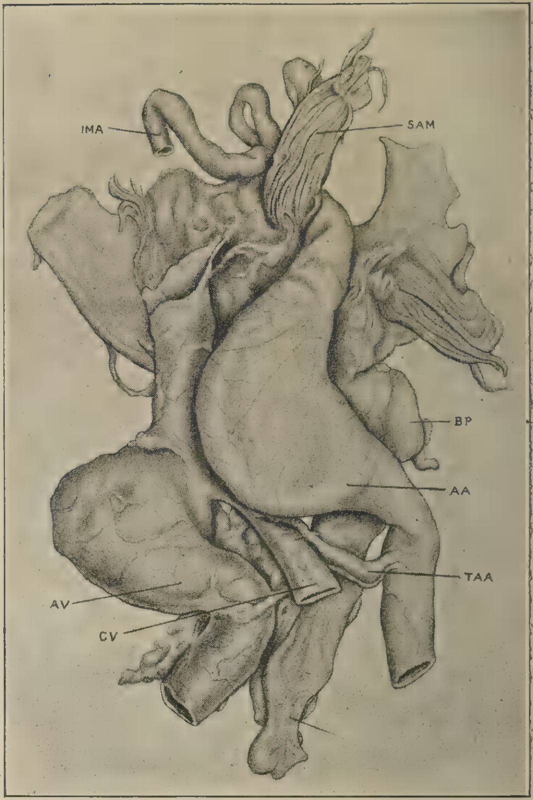
2. Spontaneous healing may occur, the orifice closing between the artery and the vein. This must have happened in Case 3, as a careful dissection by Professor J. J. Mackenzie, of Toronto, failed to demonstrate any communication between the greatly dilated vessels. As such a mode is rare, I give an abstract and a sketch of the dissection. (Fig. 5.)

CASE 3.—I reported the case originally in the *Annals of Surgery*, 1893. In 1878 the man, in running down a sloping grass plot, fell and forced a lead pencil into the arm-pit; a gush of blood followed and the arm became black and blue to the wrist. The aneurysm involved the axillary vessels. He subsequently lived a very athletic life, rowed in the Argonaut Boat Club, and served in the South African War, where he came under Sir G. H. Makins's care. He was invalided in consequence of a sudden pain on the left of the head and neck, and the patient was positive that the tumour had enlarged. He wrote to me on Oct. 17th, 1904, saying that he had marched 610 miles in 32 days and fought 16 battles, with the result of increasing his aneurysm very materially, particularly at the base of the neck. He died in May, 1909, 31 years after the accident, of gradual heart failure.

There are many cases in which the condition has lasted quite as long as this with equally good health; but the special point of moment in this case is that in the careful dissection of the vessels made by Professor Mackenzie no communication could be found between the greatly dilated axillary vessels. The final report in this case was given in THE LANCET of Nov. 1st, 1913. Closure of the orifice is exceedingly rare. Another case is reported by Pluyette[16]:—

A man, aged 33, applied in October, 1904, with a traumatic arterio-venous aneurysm of the right subclavian produced by a revolver bullet. The physical signs were of the usual character. On Nov. 15th he returned to the hospital, having had severe pains in the right hand and arm during the night. The parts were cyanosed, the pulse was scarcely palpable, but what was most remarkable was the disappearance of the thrill and murmur over the site of the aneurysm. There was pain in the course of the arteries, particularly the axillary and the brachial. The radial appeared to be large and hard, and there was no pulsation. It seems to have been an instance of cure by the formation of a thrombus in the arteries.

FIG. 5.



CASE 3.—Arterio-venous aneurysm of the axillary vessels thirty-one years after the injury. S.A.M., Scalenus anticus muscle. B.P., Brachial plexus. A.A., Axillary artery. T.A.A., Thoracico-acromial artery. C.V., Cephalic vein. A.V., Axillary vein. I.M.A., Internal mammary artery.

Occurrence of Sudden Death.

3. Sudden death may occur, either from heart failure or from embolism. Nothing was found to account for the sudden death in Case 4 of my series.

CASE 4.—A man, aged 29, admitted in November, 1904, had received 15 years previously a pistol shot in the lower third of the thigh; following this a tumour appeared, which had been present ever since. There was much disability owing to enlargement of the leg, with great distension of the veins, much lividity, and a persistent ulcer above the ankle. He died suddenly, apparently of syncope. Clinically there was a large pulsating tumour at the lower end of Scarpa's triangle, not easily compressible, with a continuous machinery murmur and a thrill transmitted up and down the leg. Anatomically the condition found by Dr. Rufus Cole and Dr. W. G. MacCallum was very remarkable. The femoral artery was dilated, and at the beginning of the lower third of the thigh presented two perforations separated by a narrow bridge of tissue; the femoral vein just opposite showed a perforation at the same level. A probe could be passed from the artery into the vein through these apertures. On the inner side and in front of the artery and vein, and communicating with both, was a sac 12 cm. in diameter formed of dense fibrous tissue and lined by a granular, deeply pigmented clot. "This sac does not form the communication between the vessels, although the probe passes readily through either into it, nor are they (i.e., the sac and the vessels) directly united, but rather by way of a small space or vestibule which lies in front of the orifice of the sac." The veins were enormously distended both above and below the level of the communication.

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[16] Bulletin et Mémoires de la Société de Chirurgie de Paris, 1905.

Evidently this large venous sac, which communicated freely with the artery, formed the pulsating tumour to be felt in the front of the thigh.

4. *Rupture* may occur with fatal hæmorrhage, of which a number of cases are recorded.

Disability from Varicose Veins and Thrombosis.

5. In the crural vessels progressive disability may result from the varicose veins, thrombosis, and ulceration. When left too late the condition of the vessels is unfavourable to operation and specially favourable to thrombosis—the surgeon's chief danger. These accidents are well illustrated in the following case.

CASE 5.—A man, aged 34, whom I saw with Dr. Halsted and Dr. Bloodgood, was admitted in May, 1897. Eight years before he was shot in the popliteal space. He did not notice the tumour for a year. It was a large spindle-shaped mass filling the popliteal space, with a well-marked continuous thrill felt over the tumour and far down the leg. The femoral artery was ligatured in Hunter's canal. The leg became gangrenous and had to be amputated. On dissection, just where the femoral becomes the popliteal there was a communication between the vein and the artery, an opening 1 cm. in diameter. Opposite to this on the wall of the artery was a sac measuring 2 by 3 cm. Above the opening the veins were greatly distended and dilated, with thickened walls. At the time of the operation it was noted that some of them were thrombosed and there was a small clot in the artery, and the communication between the artery and the vein was also closed by a small thrombus.

Widespread thrombosis probably accounts for the sudden onset of swelling and disability of a limb many years after the accident. Evidently this happened in the remarkable case reported by Rokitansky.[17]

A man, aged 62, admitted Nov. 28th, 1842, was in 1809 shot in the shoulder. The bullet was removed, but some grains of shot remained. He recovered, but had always a cramp-like feeling in the tips of the fingers of the left hand. For two years there was an increase in the size of the whole arm, which had increased rapidly in the six weeks, and on admission was œdematous and cold, with the skin of a dark red colour. In the arm-pit was an old pulsating tumour the size of a hen's egg, with marked thrill. The subclavian was tied on Sept. 23rd. He died 15 days afterwards of secondary hæmorrhage. There was an arterio-venous aneurysm of the axillary vessels, which were greatly enlarged and sclerotic, and there was a clot in the veins.

And lastly, the vascular tissue involved in the aneurysmal area may take on a nævoid growth. Apart altogether from arterio-venous aneurysm, the entire vessels of a limb, arteries and veins, may take on active growth, as in the extraordinary specimen of macroangiosis of the arm in the Charing Cross Hospital Museum, in which the growth of the vessels followed an injury. This has happened in certain cases of arterio-venous aneurysm of the vessels of the head, and though the orifice of communication may be small, within a few years the vessels (as in Cushing's case already referred to) may become enormously enlarged, much more than can be accounted for by any increase in pressure.

TREATMENT.

It is not my place to speak of treatment, but we all agree, I think, with the conclusion arrived at by Subbotich, senior surgeon of the Belgrade State Hospital, from his experience in the Balkan War, "that arterio-venous aneurysms should be operated upon, as they offer small prospect of spontaneous cure, although they often remain stationary for a long time and cause relatively little trouble." It is a good deal a question of situation and technique. As the cases here reported indicate, with the lesion of the axillary and subclavian vessels good health may be maintained for years without any serious trouble, but there are always risks, particularly of thrombus formation in the distended veins, and even after lasting 30 or 40 years serious trouble may arise. Urgency is greater in the case of the lower limbs, and I should say that it would be very much safer in the two cases we have just seen to operate before the venous engorgement becomes excessive.

A new and truly marvellous technique has been developed in vascular surgery, very largely owing to the work of Alexis Carrel, and the increasingly favourable results in this all-important department of surgery have followed directly upon animal experimentation. It is not too strong a statement to make that up-to-date vascular surgery cannot be done in a hospital whose younger surgeons have not full opportunities to experiment upon animals. The extraordinarily delicate technique of vascular suturing is an art acquired only with much practice. It is a chapter in the history of surgery of which our colleagues may be proud. I was greatly impressed with the statistics given by Matas at the last International Congress of Medicine dealing with operations on aneurysm generally.

Of the 225 cases collected 194 affected the lower limb, 23 the upper limb, 4 involved the carotid artery, 4 the abdominal aorta. Of the whole number, 53·3 per cent. were aneurysms of the popliteal. As to the operation involved, in 150 cases the obliterative operation was done, in 50 the restorative, and in 25 the reconstructive. Of the 225 cases 206 were successful, in 4 cases gangrene followed, and all four operations on aneurysms of the abdominal aorta were followed by death.[18]

Within the next year there will be greater opportunities for vascular surgery than have ever before been offered. The results of the last wars should be carefully studied by our surgeons, those given by Stevenson for the South African, by Saigo for the Japanese, and by Subbotich for the Balkan. The statistics will be found in great detail in the monograph by Monod and Van Vert.[19] They are also given by Sir G. H. Makins in the Bradshaw lecture on Gunshot Injuries of the Arteries,[20] 1913; in Bernheim's (of the Johns Hopkins Hospital) recently issued monograph on "Surgery of the Vascular System";[21] and may I refer the younger army surgeons to the section on aneurysm in "Keen's Surgery" by that modern Antyllus, my old and valued friend Rudolph Matas, of New Orleans.

In conclusion, may I put in a plea for the museums? Specimens should be sent to the Army Medical Museum, Millbank, and to the great Hunterian Collection at Lincoln's Inn Fields; and may I ask that very careful reports of the cases be sent to the Central Committee for preparation of the medical and surgical history of the war, 34, Guilford-street, Russell-square, London, W.C.

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[17] Observation 46 of his great monograph Ueber einige der wichtigsten Krankheiten der Arterien.

[18] THE LANCET, August 23rd, 1913, p. 550.

[19] Revue de Chirurgie, vols. xli. and xlii., 1910.

[20] THE LANCET, Dec. 20th, 1913, p. 1743.

[21] Lippincott Company, 1914.

THE ETIOLOGY OF RICKETS:

A STATISTICAL STUDY OF THE HOME CONDITIONS OF 400 TO 500 RACHITIC CHILDREN.

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ALTHOUGH it is now over 300 years since Glisson first described "The Rickets," the reason why the bones are deficient in calcium still remains obscure; but so carefully had this pioneer observed the symptoms of the disease that little, if anything, of clinical interest has been added to his classical description. Bland-Sutton[1] and his followers, who include the majority of English and American writers, believe that the cause lies in some error of diet, most probably a deficiency of fat. Marfan[2] has been preaching for many years that it is due to auto-intoxication from the intestinal canal, while von Hansemann[3] puts it down to what he classes broadly as domestication. There are others again—e.g., Moussu[4] and Koch[5]—who have considered rachitis to be of the nature of an infection; and finally, Basch,[6] Matti,[7] Klose and Vogt,[8] and Stoeltzner[9] are of the opinion that the disease arises from an absence of one of the internal secretions.

It is admittedly very difficult to draw conclusions from clinical observations, and especially is this so with regard to the matter of diet in the class of child that suffers from rickets, and accordingly much experimental work has been done towards the elucidation of the problem. In order, however, that one may give due weight to the very various conditions under which different workers have sought to engender the disease, it is necessary fully to appreciate the criteria by which a diagnosis of rachitis can be confidently made. For this end a careful histological examination of the bones is essential. In a growing bone the trabeculæ are composed of calcified tissue studded throughout with bone cells and surrounded by a narrow rind of structureless tissue. The extent of this zone of structureless, or so-called osteoid, tissue varies with the rate of growth, being more abundant the more rapid the growth, but in rachitis it becomes excessive and may be even more abundant than the true bone itself. It is the presence of this osteoid tissue, which may in places almost entirely replace the bony trabeculæ, that is alone pathognomonic of the disease.

Careful microscopic examination has demonstrated two facts—viz., that all examples of spontaneous and experimental rickets in animals described by veterinarians and experimentalists are not identical with the disease as met with in man; and that merely naked-eye or chemical examination of the skeleton (as pointed out by Schmorl[10] and Stoeltzner[11]) has been the cause of a great deal of misconception in the subject. Depending on naked-eye examination, as is well known, was the reason for confusing for so many years congenital syphilitic and rachitic osseous changes.

One cannot lay too much stress on the importance of the histological picture of the bone lesions, nor on the help which a true appreciation of these changes has given us in the valuation of the experimental work of the past and must give us in the experimental work of the future. This same factor, however, has unfortunately tended to confine interest to the bone changes, with the result that the question of general metabolism has been overlooked. From chemical examination of the bones and tissues it would appear that in rickets there is a serious error of the calcium metabolism consisting in the inability of the body to utilise this salt, which as a rule is present in the diet in sufficient amount. Though the poverty of the calcium is found chiefly in the bones, it exists to a certain extent in the other tissues as well.

It is by the investigation of the calcium metabolism alone that a diagnosis is possible in the earliest stages of the disease—i.e., before any bone or other gross changes have presented themselves; and it is the only method during life by which one can declare with certainty that the disease is active. During this period of the disease more calcium is excreted in the urine and fæces together than is ingested with the food, and by watching the behaviour of this calcium interchange the influence of certain factors, curative and otherwise, can be studied. Unfortunately, with the facts at present at our disposal, it is impossible to say whether the calcium, being mainly excreted in the fæces, passes for the most part through the intestine without being absorbed, and is thus conveyed to the tissues in insufficient amount, or whether, as in osteomalacia, a disease considered identical with rickets by many authorities—at least so far as its histology is concerned (Schmorl)—the bones and tissues are unable to fix the calcium which is brought to them in abundance by the circulating blood.

Dibbelt[13] inclines to the former view, but the histological examination of the lesions induced by feeding animals on a diet poor in calcium does not substantiate his contention. Soft bones can most certainly be obtained in this way, but there is a complete absence of the characteristic osteoid tissue. The trabeculæ are thinner and more widely separated than normally, but nature has made the most of the material at her disposal, and all the trabeculæ are perfect in their formation.

The latter theory is therefore more likely, and it is not improbable that the power of the bones and tissues to retain the calcium is dependent on a hormone, the product of some ductless gland. This view of the subject has been suggested by Stoeltzner,[9] who reported rapid improvement in his cases by treatment with suprarenal extract. Subsequent workers, however, have not confirmed his results. More recently Basch, Matti, Klose and Vogt have indicted the thymus gland, and a few months ago Garrod[14] made a strong plea for the hypothesis that some affection of this organ is responsible for rickets. A considerable amount of experimental work has been done on this aspect of the subject, but the results are so contradictory that judgment must be reserved for the present. There seems no doubt that the bone changes after thymusectomy described by Matti are of a rachitic nature, but that they are dependent on the removal of this structure is not so certain. After the operation the animal becomes very lethargic, and the osseous changes do not appear for some considerable time after. Hart and Nordmann[12] state that so long as the animals are allowed a sufficiency of exercise no bad effects from thymusectomy are noticed, and Pawlow[15] some years ago drew attention to the tendency to softening of bones in dogs subjected to operations for biliary, pancreatic, and intestinal fistulæ. Moreover, in rickets and thymusectomy the calcium metabolism shows definite differences. In rickets the calcium is chiefly excreted by the fæces, there being a diminished output by the urine, whereas in thymusectomy, just as in starvation and diabetes, the chief route of excretion is the urine. In this connexion it should also be remembered that in osteomalacia there has frequently been reported an increased calcium output by the urine (von Noorden[16]).

The study of the calcium metabolism also makes it very unlikely that a deficiency of fat in the diet is the cause of the trouble. Freund[17] has shown that while cod-liver oil increases the percentage retention of the calcium of the food, milk fat, on the other hand, causes an increased excretion of the salt, which is just the state of matters obtaining in active rickets. And, further, it is interesting to note that Rosenstern[18] records the case of a child that developed rickets while on a diet rich in fat.

That rickets is of the nature of an infection is a most seductive theory and one against which it is most difficult to argue. Its geographical distribution, its seasonal incidence, and the factors of hygiene which favour its appearance recall very forcibly the behaviour of endemic cretinism, and also that of typhus fever, both of which diseases are probably infectious. There is, however, a dearth of experimental proof in favour of such a conception, and in any case, whether the etiological factor is of the nature of a microbe or not, the infectiousness of the disease is certainly not great, since rachitic and non-rachitic children can be housed together without the latter running any risk of contracting the disease.

Some years ago I carried out an experimental research into the etiology of rickets, and came to the conclusion that the disease could be induced in animals by confinement. These results were embodied in a paper published in the *British Medical Journal* in July, 1908. I may perhaps here mention that Schmorl had an opportunity of examining my specimens, and he expressed the opinion that the bone changes were identical with those found in human rickets. From my experiments there was no evidence whatever that deficiency of fat, or any other dietary error, was a factor in the etiology. All the animals to which a fat-poor diet had been given developed marasmus, and after death none presented signs of rachitis, whereas those allowed a liberal diet of milk and porridge, but deprived of exercise, became markedly rachitic. This is, of course, directly opposed to the earlier teaching of Bland-Sutton, whose experimental results have never been questioned in this country, and have more or less dominated the pathology of the disease ever since.

Bland-Sutton's experiments were carried out in the Zoological Gardens, London, where previous to his researches it had been found practically impossible to rear young animals without them developing rickets. He found that the young were usually fed on lean horseflesh and bones, but as their teeth were not sufficiently strong to crush the bones, and thus extract the marrow, he concluded that the diet must necessarily be very poor in fat. To counteract this defect he administered cod-liver oil, and by this change in the diet alone he reports that he was successful in rearing young animals free from rickets. It is interesting to find, however, that rickets is still a common disease in zoological gardens (in those of London and Glasgow to my own knowledge), and that the superintendents of these institutions do not find it possible by the administration of cod-liver oil to hinder its ravages.

So far as I am aware there is only one zoological garden, at least in Europe, where rickets does not prevail, and that is the most excellent one of Carl Hagenbeck, situated on the outskirts of Hamburg. There the conditions are made to simulate the natural home of the animals, which are not kept cooped up in cages but allowed to roam about freely in parks enclosed by high railings. Trees, earth, and rocks from the natural haunts of the animals are utilised to make the place of exile as like the home conditions as possible. It is not likely that this latter factor has anything to do with the prevention of the disease, and to my mind it is due to the avoidance of "domestication," which, in von Hansemann's opinion, is the chief etiological factor. According to this author, who has written one of the most interesting papers on the subject within recent times, it is the herding of animals under unnatural conditions which induces the disease, and the more remote these are from nature the more powerful is their effect. Von Hansemann has come to this conclusion not only from a consideration of the disease as it occurs spontaneously in the human and animal worlds, but also from that experimentally induced. He remarks in his paper that rickets is unknown in Japan, and in consequence he thought that country a suitable place for conducting experiments.* Through the good offices of one of his Japanese students he got a young wild monkey captured and confined in a cage, and when curvature of the limbs appeared had it sent to him in Germany, where he made a careful histological examination of the bones. The bone changes he describes as identical with those met with in human rickets, and he concluded that they had been brought about by the confinement.

Since the publication of my paper I have heard of several instances in the animal world where confinement or deficient exercise was responsible for the development of rickets, or at least a disease clinically closely simulating it. Dr. John Fergus, of Glasgow, at a discussion on this subject before the Glasgow Medico-Chirurgical Society, related how during the summer his son and niece each had a fox terrier pup of the same breed and of about the same age. His son was able to run about with his pet and thus it obtained plenty of exercise, but his niece, who was unable to do this, had her favourite tethered to a garden seat in order that she might always have it by her. Both were fed exactly alike so far as could be ascertained, and the only difference in the treatment of the two animals seemed to be in the amount of exercise allowed. By the end of the summer the boy's dog was a fine healthy animal, whereas that of the little girl had become so deformed from what Dr. Fergus described as rachitic curvature of the bones that it had to be destroyed.

The following is an extract from a letter which I received from a farmer on the West Coast of Ireland.

> I have learned of a case of rickets in a pup about which I am sure you would like to hear. This pup was fed on a perfect food—new milk, but from the very start was kept confined in the bottom of a barrel, where it was quite

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* Since the publication of Hansemann's paper several reports have appeared on the question of rickets in Japan. In the year 1906, while examining recruits, rickets and osteomalacia were accidentally discovered by Ogata in the Province of Toyama, which is situated on the western shore of the north island. It would seem that the disease is endemic in this region and, according to folk-lore, to have existed for at least 50 to 100 years. The land is low-lying, very moist, and badly irrigated, and the houses are not so well lit or ventilated as in the rest of Japan. To these factors Ogata is inclined to ascribe the disease, and as a prophylactic measure he suggests that these defects should be removed as far as possible.

> impossible it could exercise itself. One swallow does not, of course, make a summer, and one case of the kind does not prove that rickets is caused by want of exercise, but in the light of your investigations, and the great rarity of this disease in the West of Ireland (I having never seen a case of rickets in the West of Ireland in man or beast), has weight.

Through the son of another farmer in Ireland I learned that his father had noticed that during the winter rickets occasionally developed in sheep which were housed in sheds, whereas those left on the hills, though not so well fed, never showed the slightest trace of the disease.

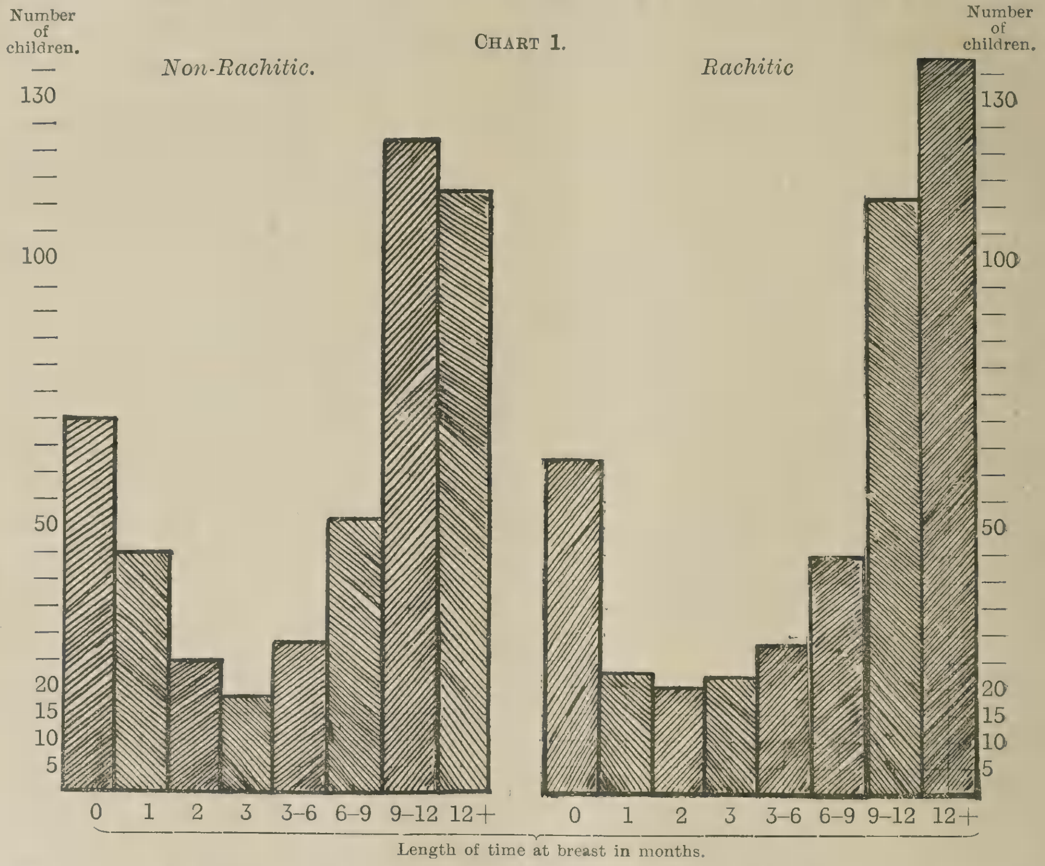


CHART 1.

That exercise has a very definite effect on the retention of calcium is shown by the work of Kochmann and Petzsch.[19] These authors during the course of a research into the factors influencing calcium metabolism encountered one animal in which they found it impossible to bring about an increased excretion of that salt. In the protocol dealing with this experiment it is noted that the animal never was at rest, and the authors concluded that exercise was one factor which strongly influenced the metabolism of calcium. As further exemplifying the effect of exercise in rickets I might perhaps quote from Mayo,[20] who, writing on this malady in 1674, says that "scabies or itching occurring in the course of this disease contributes much to its cure," and to my mind it can only be by forcing the patient to exercise himself that any benefit can accrue.

During the past two or three years I have been collecting information regarding various factors in the life of the rachitic child, some of which have been suggested as predisposing to the disease. The points investigated were: (1) The length of time the child was breast-fed; (2) the order of the child in the family; (3) the condition of the bowels previous to the onset of the trouble; (4) the amount of air space in the house allowed to the child; (5) the number of stairs up the house is situated; and finally (6) whether or not the child has been taken much out of doors. It should perhaps be mentioned that in Glasgow, as in most of the smaller towns in the West of Scotland, the houses are built on the tenement system. These tenements are not usually separated from the street by a garden, and are three or four storeys high. Each flat contains three or even six houses, the number depending on the number of apartments. In the poorer districts of the city houses of several rooms have been subdivided into houses of one apartment, so that many of the common passages are dark and badly ventilated. Other workers, as McGregor,[21] have studied some of these conditions—e.g., the number of stairs up the children reside, but his figures relate for the most part to children in whom the disease was healed, whereas I have taken pains only to utilise facts concerning cases in the active stage of the disease. Whenever possible I have compared the rachitic with non-rachitic children.

Length of time child has been breast-fed.—It has been suggested that denying the child its natural food is an important etiological factor, but my records do not lend support to such an idea. In Chart 1 are graphically represented the number of children breast-fed for varying periods, and in the rachitic as well as the non-rachitic it will be seen that the majority have been suckled for nine months or longer. The similarity of the rachitic and non-rachitic charts is very striking, and disposes not only of the idea that want of breast milk, but also, as has been assumed, that prolonged suckling is at the root of the mischief.

Intestinal troubles (Chart 2).—As mentioned above, Marfan holds that an intestinal auto-intoxication is the source of the trouble, and states that almost invariably there will be obtained a history of some gastro-intestinal disorder for a considerable time before the onset of the disease. My statistics certainly do not support this teaching, since in by far the largest number of the cases the condition of the bowels was described as regular. Although it must be admitted that gastro-enteritis is a not infrequent condition in the class of child which supplies most examples of rickets, marasmus is a more frequent sequel, and marasmic children, as is well known, are not prone to the disease.

CHART 3.

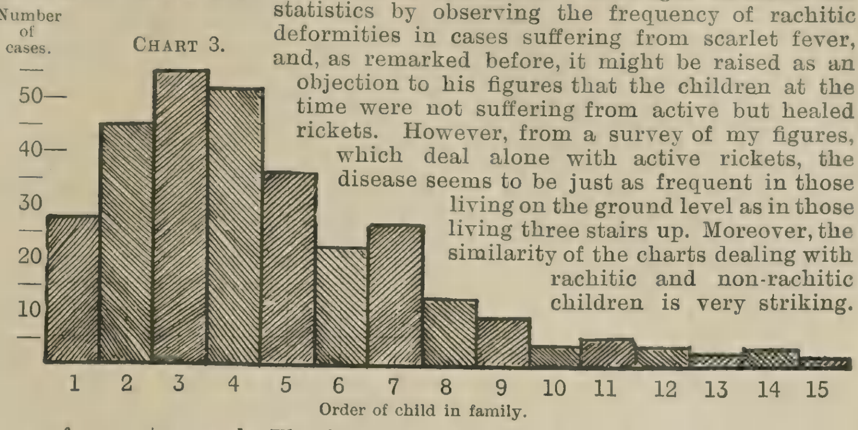
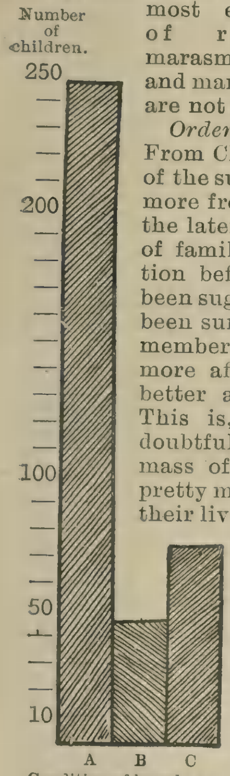


CHART 2.



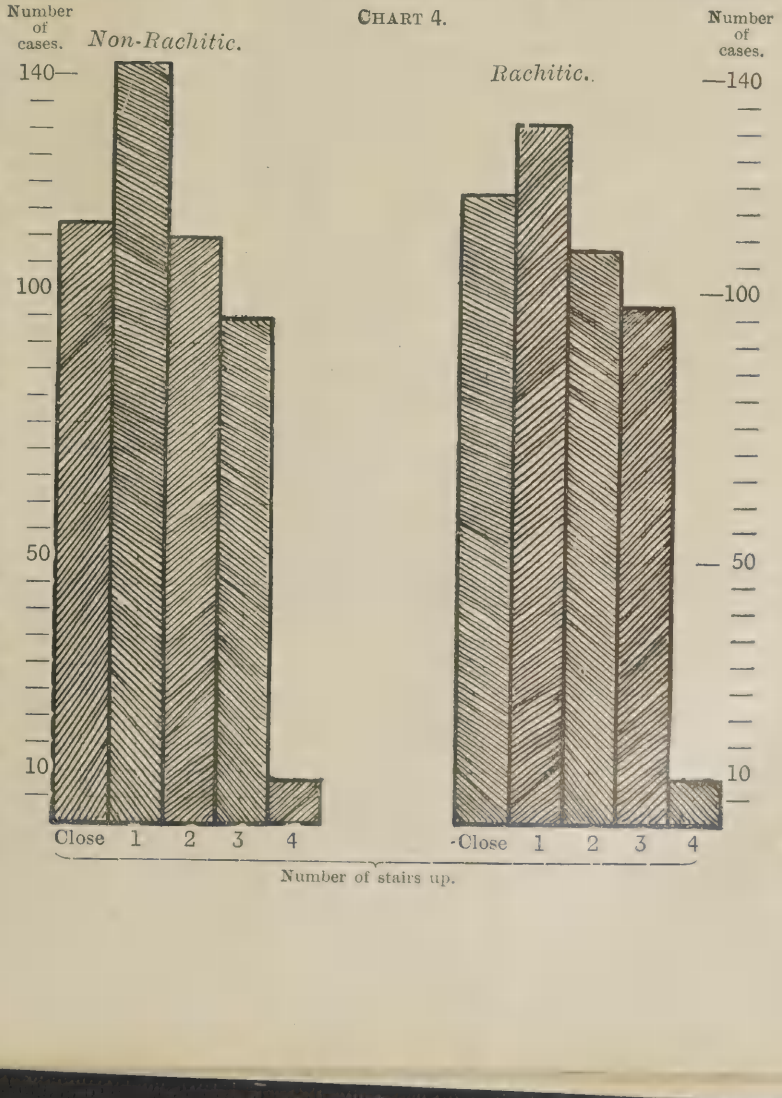
Condition of bowels previous to onset of rickets. A, Regular. B, Constipation. C, Diarrhœa.

Order of the child in the family.—From Chart 3, dealing with this aspect of the subject, it will be seen that rickets more frequently attacks the earlier than the later members of a family. This type of family incidence has attracted attention before, and several reasons have been suggested to account for it. It has been surmised that by the time the later members are born the parents are in more affluent circumstances and thus better able to feed and house them. This is, however, very doubtful, as the great mass of the poor earn pretty much the same all their lives. Again, it has been suggested that the rarity of the disease in the younger members of the family is due to the fact that they are nursed and taken out by their older brothers and sisters, which is, in my opinion, a more likely explanation. It is not improbable, however, that this peculiarity of family distribution is more apparent than real, and is entirely explained by the fact that the majority of families are composed of only four or five children.

Situation of house: number of stairs up (Chart 4).—If want of fresh air plays any part in the etiology of rickets, one would not be surprised to learn that children living in top-flat houses, being probably taken out little, were more prone to the disease than those occupying houses on the ground level. McGregor in his investigations paid particular attention to this point, but he did not find that children living three stairs up were more frequently affected than those in houses on the level of the street. McGregor obtained his statistics by observing the frequency of rachitic deformities in cases suffering from scarlet fever, and, as remarked before, it might be raised as an objection to his figures that the children at the time were not suffering from active but healed rickets. However, from a survey of my figures, which deal alone with active rickets, the disease seems to be just as frequent in those living on the ground level as in those living three stairs up. Moreover, the similarity of the charts dealing with rachitic and non-rachitic children is very striking. The infrequency of the cases resident in houses four stairs up is to be accounted for by the fact that there are very few houses of this type in Glasgow.

Amount of air space in house allowed to each child (Chart 5).—As overcrowding and deficient air space are characteristic of the houses of the class which supplies most examples of this disease, and the very opposite of what prevails in those parts of the globe where rickets is unknown, not only in the human but also in the animal world, it seemed not unlikely that investigation of these conditions in a city like Glasgow would show that they are definitely proportionate to the frequency of the disease. In my researches I have taken one individual per room as the unit, and

CHART 4.

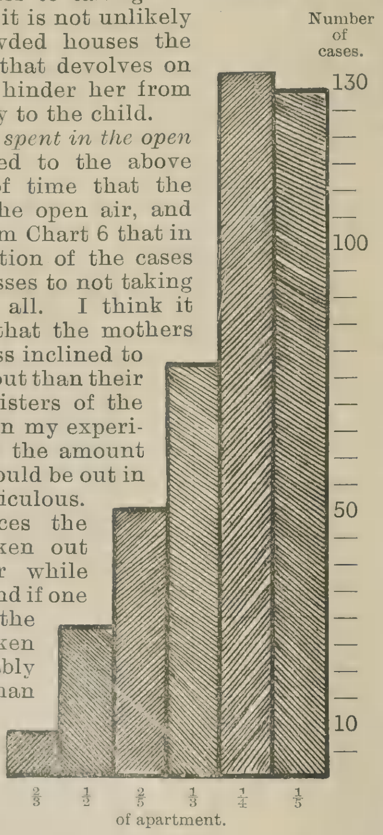


have expressed the amount of air space per child in fractions of this unit. I have not differentiated between rooms of varying size. Examination of my results shows very definitely that the disease is proportionate to the amount of air space allowed to the child, and that as this diminishes in amount the incidence of the disease rapidly increases. Unfortunately I have no figures relative to a series of non-rachitic children of the same class, and it is just possible that the amount of air space is simply a gauge of the poverty of the family, and in consequence other factors than want of air space are in action. The examination of the blood[22] which I carried out some years ago in this disease tends, however, to support the idea that this factor is at work. The average rachitic child showed a higher percentage of hæmoglobin and a greater number of red blood cells than the average healthy child, exactly the condition which is found in persons subjected to a rarefied atmosphere.

Probably the want of sufficient fresh air acts in a twofold manner. In the first place, the absence of pure air will act as a sedative and tend to make the child less inclined for exercise. I have frequently noticed that if a child is confined to the house it is more easily tired, is less active, and wishes to go to bed earlier, so that the living in overcrowded rooms acts just in an opposite manner to taking the child out. Again, it is not unlikely that in overcrowded houses the amount of work that devolves on the mother will hinder her from attending properly to the child.

Amount of time spent in the open air.—Closely allied to the above is the amount of time that the child spends in the open air, and it will be seen from Chart 6 that in the larger proportion of the cases the mother confesses to not taking the child out at all. I think it will be conceded that the mothers of the poor are less inclined to take the children out than their more fortunate sisters of the upper class, and in my experience their idea of the amount of time a child should be out in the open air is ridiculous. In many instances the child is only taken out with the mother while doing messages, and if one gets a history of the child not being taken out it is probably true. It is more than likely, too, that many of my cases included among those allowed out were practically speaking not taken out. These two factors—confinement and deficient fresh air—act, as I have said before, by making the child more lethargic and less inclined to exercise itself, although it is quite possible that deficient oxygenation of the blood itself helps towards the production of the special rachitic metabolic error. The results which I have obtained in the treatment of the disease with massage, passive movement, and electricity are strongly confirmatory of the view that deficient exercise engenders the condition. So far as my experience goes no variety of dietetic or medicinal treatment brings about the same rapid and complete cure. The children are encouraged to walk, and as yet I have not seen any bad effects follow such practice.

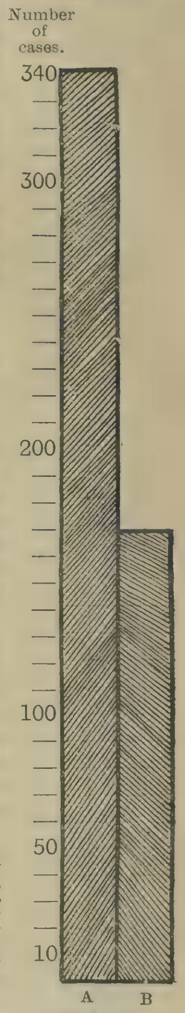
CHART 5.



In view of these facts—the effect of deficient exercise on the calcium retention, the influence of confinement in the production of human and experimental rickets, and the frequency with which the disease is encountered in overcrowded houses—I considered it not unlikely that rickets would be exceedingly prevalent in those parts of the world where the people were confined in badly ventilated houses and where sunlight was absent for long periods of the year.

After a fairly extensive search through the diaries and journals of travellers to Iceland, Greenland, and Alaska, parts of the world where the winters are long and dark and where the houses are badly ventilated and devoid of all sanitary conveniences, houses in which many people are huddled together for weeks at a time, I have not come across a single suggestion that rickets is ever encountered. Yet these are just the places where one would have expected *a priori* the disease to have been rampant. True, the Esquimos are described as being bandy-legged, but this is accounted for by the lowness of the roofs of the houses, the heavy ungainly boots that they wear, and the great amount of time that they spend crouched up in their boats. The absence of the disease is the more remarkable when one remembers that for weeks at a time darkness prevails, and during the winter the inhabitants spend most of the time in badly ventilated huts, although it must be admitted that it is just at this season of the year that abundant fat is consumed.

CHART 6.



A, Child not taken out. B, Child taken out.

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Glasgow.

SIR ALMROTH WRIGHT'S LECTURE ON THE TREATMENT OF WOUNDS IN WAR.

BY SIR W. WATSON CHEYNE, BART., C.B., F.R.S.,
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IN this short note in reference to Sir Almroth Wright's recent lecture on the treatment of wounds in war I do not propose to criticise his paper; indeed, I am in agreement with a good many of his statements, especially with those on the use of antiseptics in septic wounds. In speaking of the treatment of septic wounds Sir Almroth Wright objects to the use of antiseptics, and in the present state of our knowledge I believe that he is quite right. This is a point which I have taught for years and on which I laid special stress in my paper at the Medical Society last November. Indeed, I would go further than Sir Almroth Wright appears to do in objecting to the practice of syringing out these wounds with antiseptic lotions. I dislike to see septic wounds washed out with antiseptics. That procedure cannot possibly disinfect the wound nor in any way diminish the sepsis even temporarily except by the mechanical removal of the pus, which can be done much more safely by the use of isotonic solutions, and not only so, but the antiseptic may seriously interfere with the antibacterial action of the tissues especially if it is at all a strong solution used under the idea that it will act as a bactericide.

Free drainage and irrigation, referred to by Sir Almroth Wright, are of course well-known and long-established methods of treating septic wounds, and are, in my opinion, the best methods of dealing with them. The only new practical point in Sir Almroth Wright's suggestions, a point which, however, he had made previously, is the use of a strong solution of salt with the view of leading to increased flow of lymph. Curiously enough, it is stated that this acts by osmosis, but that must surely be a slip of the pen. Colloids such as lymph dialyse very slowly or not at all, and practically the only result of placing a strong solution of salt outside a blood-vessel would be the exit of the water and salts of the blood. Any increased flow of lymph which may arise from the introduction of a hypertonic salt solution into a wound will be the result of irritation, and the question then arises whether salt is the best irritant, or whether, indeed, it is wise to use an irritant at all. I must confess that my inclination is against the employment of irritants because I doubt very much whether the lymph does contain all, or indeed the most important, antibacterial substances of the body. My own view is that these substances reside in the tissues themselves to a much greater degree than in the blood and lymph, and the application of an irritant may seriously interfere with the natural processes. However that may be, I shall watch with great interest Sir Almroth Wright's attempts to eradicate sepsis from wounds by what he terms "physiological methods."

The reason why I am writing this note is, however, to emphasise the point on which I am particularly insistent—viz., that while Sir Almroth Wright's studies concern wounds as they reach him at the base hospitals, already in a highly septic state and in a stage in which antiseptics as ordinarily employed are of no avail, there is a preceding period, which he does not come across, in which the septic process has not yet taken root in the wound, and in which it may be eradicated by the proper use of antiseptics. It is on this period that my researches are concentrated, and at this stage the use of antiseptics presents to my mind the only possible chance of success. Our work and Sir Almroth Wright's are in no way antagonistic. He takes matters up at a stage where our suggestions are possibly no longer of any special value or where these suggestions have not been followed or have failed to accomplish their object. But what a change in the whole aspect of military surgery if our plans should succeed! What a saving of suffering and of life! And reports are beginning to come in which show that such success is not improbable. Surely this is the most important point in the treatment of these wounds, and I do not think that we can too often call the attention of the profession to this most important, though short, period in the history of these cases. This is the time for the employment of antiseptics, and I am convinced that if suitable antiseptics are chosen, and if they are thoroughly and scientifically applied, a very considerable proportion of the cases will escape the dangers and the troubles of a septic wound.

It is being constantly said that there is something peculiar and special in wounds in war as compared with those which occur in civilian practice. In my opinion this is not so; it is only a question of degree and not of kind. I have been very much surprised to read in the daily papers accounts of the wonderful discoveries which were being made at the front with regard to the bacteriology of these wounds, of the anaerobic bacteria, the coliform bacilli, the streptococci, and so on. But the same bacteriological flora is common enough in civil injuries, especially in those soiled with earth, and are quite familiar to those of us who have made a study of these matters. Nor are the bacteria in injuries in civil practice confined to the exterior of the wound, as Sir Almroth Wright seems to imply. The whole wound becomes infected just as happens in the wounds which he meets with at the military base hospitals, and septic compound fractures are often just as serious in civil as in military practice. From reading his remarks one would think that all compound fractures in civil practice ran an aseptic course. Alas! far from it. Sir Almroth Wright, when he comes back to this country, will find ample opportunities for continuing his search for a physiological method of treating septic wounds.

The difference between the military and the civilian compound fractures is one of degree and not of kind. In the civilian cases the injury is usually more limited than in those inflicted on the field of battle; there are seldom the long channels in the tissues, difficult of access, in the former which occur in the latter, but there is the same blood clot and the same torn and bulging muscles, rendering the channel irregular, in the one as in the other. And though the infection may be carried in further in the military than in the civilian cases, this does not, I think, mean so much as one might at first sight suppose. The bullets or the pieces of shell soon part with the septic material which they carry in with them, as shown by the frequency with which these bodies become encapsuled. This was an observation made long ago by John Hunter, who built up a theory that if a bullet were in the depth of the tissues the latter did not resent its presence or make any attempt to remove it, while if it remained near the surface they underwent suppuration with the view of extruding it.

I hope that these two stages in the history of wounds in war, the one before sepsis has become established and the other after it has taken root, will be clearly differentiated in the minds of those who have to deal with them, and that, because the latter cannot be disinfected by our present means, surgeons will not therefore relax their attempts to eradicate the septic elements in the former or early stage while there is still time to do so. It is a terrible attitude to take up that these wounds must necessarily become septic and that it is useless to make any attempt to prevent this occurrence.

TREATMENT OF THE WOUNDED ON BOARD H.M.S. "TIGER" DURING THE NAVAL ACTION OF JAN. 24TH.

BY J. C. KELLY, M.D., B.A. DUB.,
SURGEON R.N.

THERE were two medical distributing stations, one aft and the other forward. I was stationed at the after one, which was situated directly beneath the quarter deck and immediately forward of X turret. We had a plentiful supply of water from two large fresh-water tanks, while hot water could be supplied from a steam geyser. There were two cases of "emergency surgical dressings," one big medicine chest, and a set of drawers containing tourniquets, bandages, strapping, instruments, and all the drugs and medicines most likely to be required. In case of the electric light failing, light could be obtained from six oil lamps, which were fixed in convenient places; besides an operating table we had a small stand for basins and another for instruments.

My first-aid party consisted of about nine persons altogether, including three of the sick-berth staff, the remainder consisting of gun-room and ward-room stewards, cooks, &c. The forward distributing station was quite accessible from the after one by means of the ammunition passage. My senior medical officer and the other surgeon were stationed here, as well as a similar first-aid party consisting of officers' stewards, cooks, &c. Like the after one, the forward distributing station was fitted with hot and cold water, operating table, cases of dressings, &c., and in addition there was an X ray apparatus; the tubes, however, were broken during action owing to the concussion caused by our fire.

It was arranged that after the action the party stationed aft should search for wounded in Q and X turrets and along the port 6-inch battery, and that the party stationed forward should search A and B turrets and the starboard 6-inch battery. We soon had everything rigged up, dressings and lotions out, and the operating table ready in case it would be wanted, and then my party came forward of the bulkhead next the distributing station into the ammunition passage, and there we remained during the entire action.

At 8 A.M. we sighted the enemy off our port bow, and at 9.2 A.M. we fired our first shot, and from that on until the "secure" sounded the firing continued. The time passed quickly, and after the first half hour when the excitement of hearing our own guns fire in anger had passed off, my first-aid party spent the time endeavouring to find out what was happening, and later on when they heard we had been hit they discussed the chances of our going back to Devonport and getting some leave while the ship was being repaired. One or two started reading papers, but they did not do so for long as things became too "hot." Each time we were hit the shell caused a terrific crash, shook the ship, then one could hear any quantity of loose débris and splinters falling.

At about 11.20 our first patient was brought to us, a boy (Case 11) suffering from burns about the face and a sprained ankle. We soon treated him and put him in one of the officers' cabins close by. Very soon after the chief gunlayer (Case 5) walked from Q turret, in spite of his receiving a compound fracture of the right fibula; he was badly burned about the face and left eye, and had a badly lacerated wound in the left hand, fracturing the first metacarpal bone. As we were under a very heavy fire at this time, and with so little armoured protection, I did not care to treat him in the after station, so I sent him to the forward distributing station where his wounds could be more efficiently dealt with.

When the action was over we searched for wounded. I went to Q turret. In the gun house we discovered two men dead, and in the working chamber below we found an A.B. (Case 6). He was suffering from considerable pain in his side, so we put him in a Neil Robertson stretcher, and after hoisting him up into the gun house through a trap-door we eventually got him out of the turret, and from there carried him down to the after distributing station. We strapped his left side, gave him a $\frac{1}{4}$ gr. of morphia (as he was suffering from a certain amount of shock), and then put him in one of the adjoining officers' cabins. The only other case treated in the after station was another A.B. (Case 8). I then went to the forward distributing station where the remainder of the wounded had been brought. All the injuries of the patients that had been brought here were caused by a shell which exploded in the intelligence office, which was situated under the signal distributing office and gun-control tower where these patients were stationed. This shell also accounted for 8 deaths.

In the afternoon we brought all the patients up from the distributing stations to the sick bay, where their wounds were thoroughly cleansed and again dressed. We arrived back at our base on the following Tuesday morning (Jan. 26th). The three wounded officers were transferred to the hospital yacht, *Sheelah*, and the men to the Naval Sick Quarters, South Queensferry.

CASE 1. *Burns of the face and fracture of left ulna.*—A lieutenant. This officer came to the forward distributing station during action, suffering from burns of the face and scorching of the scalp, the result of a shell explosion beneath the gun-control tower where he was stationed. His hair was badly scorched, but the scalp did not appear to be burnt. The burns about the face were mostly of the first degree. There was a certain amount of shock present, so that morphia, gr. $\frac{1}{4}$, was given hypodermically the same night. The burns were dressed with picric acid. There was also a small fracture of the left ulna situated about its middle, consisting of a small triangular piece of bone detached from the posterior border of the ulna. On Jan. 26th he was transferred to the hospital yacht *Sheelah* for further treatment.

CASE 2. *Multiple injuries.*—A sub-lieutenant. This officer came to the forward distributing station during the action suffering from multiple injuries received, the result of a shell explosion near the gun-control tower where he was stationed. There was a deep scalp wound on the left side of the vertex about 2 in. long; both membranæ tympanorum were ruptured, causing bleeding from both ears; there was a wound perforating the lower lip, the lower incisor teeth were knocked backwards, and the left angle of the jaw was fractured. On the lower and inner side of the left knee there was a flap of skin and superficial fascia separated up to its base (about the level of the internal semilunar cartilage), the base being about 3 in. and the length of the flap 2 in. The wound did not involve the knee-joint. On the right thigh there was a burn of the second degree. In the afternoon he was brought to the sick bay, where his injuries were dressed under an anæsthetic. The wound on the inner side of the knee was swabbed with pure carbolic, then sutured. His scalp wound was thoroughly cleansed, then sutured. The other wounds were also carefully cleansed and dressed. The wound perforating the lip was sutured, the suture not involving the mucous membrane. The ears were lightly plugged with gauze. Eight minims of antistreptococcic serum were injected hypodermically the same evening; the usual reaction followed; also morphia, gr. ¼. He was transferred to the hospital yacht *Sheelah* on Jan. 26th for further treatment.

Case 3. *Abdominal injury.*—A midshipman. This officer was brought to the forward distributing station from the gun-control tower where the pointer of the director was driven into his abdomen just below the xiphisternum, the result of a shell explosion. He also received an incised wound in the right leg and burns of the first and second degree on both legs and genitals. He suffered considerable pain in the region of his abdominal wound, but apparently it did not perforate the abdominal wall. It was treated with iodine solution and dressed with gauze. The wound in the right leg was a small incised one situated at the back of the internal malleolus where the flexor tendons had been partially severed; this wound also received a simple dressing. The burns were treated with picric acid dressings. He was given ¼ gr. of morphia that night hypodermically, also ♏ 8 of antistreptococcic serum. The following morning he stated he had not had a good night. Temperature 104° F.; pulse 108. There were marked tenderness and rigidity in the region of the wound, but none in the lower part of the abdomen. His general appearance was good and there was never any vomiting. He was given another hypodermic injection of morphia, gr. ¼, that night (Monday). The following morning (Tuesday) he stated he felt much better. The temperature had fallen to 99° and the pulse to 99. There was still considerable amount of tenderness and rigidity in the region of the wound. He was transferred to the hospital yacht *Sheelah* for further treatment.

Case 4. *Fracture of the left femur.*—This patient, a stoker messenger, received the above injury during the action. While descending from the signal distributing office down the escape to the deck below, the shock caused by firing the 13·5 guns caused him to fall and fracture his left femur. He was brought to the forward distributing station, where a fracture in the middle of the left femur was easily diagnosed. He suffered considerably from shock, so morphia, gr. ¼, was given hypodermically and a long Liston splint applied. After the action he was put to bed in the sick bay. As he still suffered from shock, morphia, gr. ¼, was given hypodermically that evening and again the following Monday. He was transferred to the Naval Hospital, Queensferry, on Jan. 26th for further treatment.

Case 5 *Lacerated wound of the hand; compound fracture of first metacarpal and right fibula.*—Chief petty officer. This patient walked to the after distributing station during the action suffering from the above injuries the result of a shell explosion. On examination there was a compound fracture of his right fibula just above the external malleolus. There was a bad laceration of the left hand, fracturing (compound) the first metacarpal bone. There was also a smaller wound in the right hand, as well as burns about the face and left eye from cordite. The wounds were carefully dressed and the fractured fibula was put up in splints. Morphia, gr. ¼, was injected that night and again the following night. Treated with ♏ 8 of antistreptococcic serum and had well-marked reaction afterwards. He was transferred to the Naval Hospital, Queensferry, for further treatment on Jan. 26th.

Case 6. *Fractured rib.*—This patient (an A.B.) was brought to the after distributing station from Q turret suffering from severe pain in the left side in the region of the eleventh rib. He received his injury during the action, and it was due to a shell explosion which caused his left side to fall against a supporting piece. On examination there was severe pain on pressure over the lower ribs on the left side; the left side of the chest was strapped. He suffered considerably from shock, so morphia, gr. ¼, was given hypodermically. His abdomen was very rigid, and though at first he complained of no pain, later on he did, and at 8 P.M. he passed 4 oz. of bright red blood per urethram. There was no evidence of urinary infiltration into his scrotum or elsewhere, and a catheter was not passed. His temperature and pulse remained normal. No specially tender spot could be detected in his abdomen, although he kept it rigid. The following day the blood completely disappeared from his urine; his temperature and pulse remained normal, and he felt better, although there was still some rigidity present. He was discharged on Jan. 26th to the Naval Hospital at South Queensferry for further treatment.

Case 7. *Burns of the face and head.*—A stoker. This patient was brought to the forward distributing station from the signal distributing office during the action suffering from burns of the face and head. The eyes were not affected. Picric acid dressings were applied, and morphia, gr. ¼, was given hypodermically the same night. On Jan. 26th he was transferred to the Naval Hospital, South Queensferry, for further treatment.

Case 8. *Wounds of the feet.*—This man (an A.B.) came to the after distributing station after the action suffering from wounds in both feet due to splinters from a shell explosion. On the left foot there was a small but deep cut from which he pulled out a piece of shrapnel about 1½ in. long; there was a certain amount of oozing from the wound. There was also another smaller wound on the dorsum of the right foot. Simple dressings were applied. He was transferred to the Naval Hospital, South Queensferry, on Jan. 26th for further treatment.

Case 9. *Fractured clavicle.*—A stoker. This patient came to the forward distributing station during the action, after being blown back and falling down the fore escape owing to a shell explosion. He received a fracture beween the outer and middle thirds of his clavicle (right). The fracture was put up by the Sayres method. He was transferred Jan. 26th to the Naval Hospital, Queensferry, for further treatment.

Case 10. *Burns of the left side of face and neck.*—This boy was brought from the fore 6 inch control during the action suffering from burns of the first and second degree of the left side of the face and neck. Picric acid dressings were applied. He was transferred to the Naval Hospital on Jan. 26th for further treatment.

Case 11. *Burns of the face; sprain of the right ankle.*—This boy was brought to the after distributing station during the action, suffering from slight burns of the face and scorching of the scalp, as well as a sprained right ankle, the result of a shell explosion near the signal distributing office, where he was stationed. There was some shock present, so morphia, gr. ¼, was given hypodermically. Picric acid dressings were applied to the burns, and lead lotion to the sprained ankle. He was transferred to the Naval Hospital, South Queensferry, on Jan. 26th, for further treatment.

I regret at not being able to obtain more details as to the progress the patients made after we discharged them to hospital. They all steadily improved, and some of them, I believe, have returned to duty already. The case of the midshipman (Case 3) gave us some cause for anxiety, as we thought exploratory operation desirable to find out if the parietal peritoneum was perforated; but as his symptoms were not urgent, and considering the very septic condition of the ship, we came to the conclusion such a procedure was too risky. When he was removed to the *Sheelah* no operation was considered necessary. His condition progressed favourably, and he is now convalescent. A fracture of the sternum was subsequently discovered.

None of the patients received any active treatment except the chief petty officer (Case 5), who was operated on the hand for suture of tendons, and the sub-lieutenant (Case 2), who had an operation for septic parotitis resulting from the fracture of the left angle of the jaw. Later on he developed a cellulitis in his left forearm, caused by a piece of cordite which entered at the wrist and fetched up in the middle of the forearm; the piece of cordite was afterwards removed. I believe that the stoker (Case 4) had his fractured femur plated, but I was unable to find out definitely.

EPIDEMIC CEREBRO-SPINAL MENINGITIS.[1]

BY FREDERICK E. BATTEN, M.D. CANTAB., F.R.C.P. LOND.,

PHYSICIAN TO HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET, ETC.

MAY I thank the Harveian Society for the honour they have done me in asking me through their secretary to open the discussion on this most important subject? It is one which has always interested me, for in my connexion with the Children's Hospital, Great Ormond-street, it has been possible to study the disease in its endemic form and to compare the features of the endemic with the epidemic type of the disease. Your excellent secretary has wisely allocated certain portions of this subject to other speakers specially skilled in their various departments, and my part will be to give a general review of the subject, leaving it to subsequent speakers to fill in the numerous gaps. I shall more especially deal with the clinical features, diagnosis, and treatment of the disease, leaving it to others to deal with the bacteriology, vaccine-therapy, &c.

Epidemiology of the Disease.

It must be recognised that cerebro-spinal meningitis is no new disease either in its endemic or epidemic form. During the last century epidemics have occurred on the continent, in America, and in this country. The last epidemic in this country was in 1907–08, when it occurred in Belfast and Glasgow. It may be said to be an endemic disease in Norway, and if one studies the excellent monograph on the subject published by Looft one sees that it not only is constantly found in that country, but varies in its incidence not only from year to year but also according to the season of the year. It must be recognised that cerebro-spinal meningitis due to the meningococcus is constantly present in London. It is an endemic disease but has an epidemic period in the spring of each year, the greatest number of cases occurring during the months of February, March, and April, falling off during May and June—only a few cases occurring during the last six months of the year.

It is interesting to compare the course of this disease with that of poliomyelitis, an endemic disease having a seasonal variation showing a curve which begins to rise in June, reaches its maximum in August, falls away to a low level in November. Cerebro-spinal meningitis as an endemic disease affects chiefly children, and especially infants below the age of one year. In the year 1907 epidemic cerebro-spinal meningitis was made a notifiable disease in the county of London and permanently so in 1912. It is interesting to note that in this year also poliomyelitis was made a notifiable disease.

The disease is spread by the transference of the meningococcus from individual to individual. As Professor Andrewes rightly points out, "the disease does not spread as a meningitis; what is spread is the meningococcus; the meningitis is an accident, which happens only in a certain proportion of those invaded by the meningococcus."

Misleading Names under which the Disease is Known.

The names under which this disease is known are somewhat misleading. Epidemic cerebro-spinal meningitis presupposes that the spinal membranes are invariably affected, which is not always the case, for cases of acute meningococcal septicæmia occur in which death supervenes before the meninges are affected. "Spotted fever" suggests that the disease is accompanied by a rash—a symptom which is by no means constantly present. Epidemic cerebro-spinal fever might serve, but even such a name suggests that the spinal membranes must be affected.

Meningococcal fever or septicæmia might be suggested, but that would not certainly solve the difficulty, and would raise bacteriological difficulties which might be harder to deal with than the clinical inconsistencies. Let us stick to the name epidemic cerebro-spinal meningitis, recognising that just as the pneumococcus may at times give rise to infection in different parts of the body—thorax, peritoneum, joints, membranes of the brain—so the meningococcus may in like manner fall on different structures, but seems to have a preference for the membranes of the brain.

Experimental Work.

In 1905 Flexner produced cerebro-spinal meningitis in the monkey by injecting subdurally virulent cultures of the meningococcus. The infective inflammation produced resembled the human infection closely, except that it was often more severe. The inoculation caused severe illness in a few hours and death in from 18 to 24 hours. At the height of the infection a blood invasion occurred. The rapidly fatal instances resembled the fulminating cases among human beings, the other the human cases of average severity. A monkey was immunised and the serum obtained therefrom injected directly into the spinal canal of infected monkeys with favourable results; if injected into the blood and subcutaneous tissues the animals succumb. An immune serum prepared in a horse by alternate injections of dead and living cultures was shown to have similar properties to the serum produced in monkeys. By the use of this serum the mortality, which in untreated cases is about 80 to 90 per cent., fell to 18 per cent. for those treated within the first three days of illness, to 27 per cent. between the fourth and seventh day of illness, and to 36 per cent. when treated after the seventh day. It is important to remember that the mortality among cases occurring towards the end of an epidemic is considerably lower than that at the beginning.

Clinical Features.

Shortly stated, epidemic cerebro-spinal meningitis may be said to be an acute epidemic disease starting with fever, vertigo, severe headache, and vomiting. Delirium is often present, and the patient complains of intense pain in the back and neck and often of a sore-throat. A *rash* may be present over the body, either as a mottling of the skin or as raised erythematous areas with a small central vesicle into which hæmorrhage may occur. The rash is usually distributed over the periphery of the limbs, and is, except for its distribution, like a measles rash. In the acute form of the disease the patient has the appearance of a profound toxæmia. The soft palate is injected, the fauces swollen and red and covered over with mucous secretion which gives them a grey appearance. It is interesting to note that though there is this intense injection of the fauces the gland at the angle of the jaw may show little enlargement.

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[1] A paper read before the Harveian Society of London on April 22nd, 1915.

The patient lies with the legs flexed and the neck held rigid and resents movement. If an attempt be made to extend the legs it is found that they cannot be extended beyond a right angle to the thigh. The patient may be acutely conscious of his condition, and may from time to time become delirious and violent, at other times he may be completely comatose. In an acute case the disease may run its whole course in a few hours, headache, delirium, coma rapidly succeeding one another so that death occurs within 24 hours. In some cases there may be profound septicæmia without any sign of meningitis, and in such cases on lumbar puncture the cerebro-spinal fluid may be found normal. These are cases of acute meningococcal septicæmia.

Now by the side of such an acute disease as is above presented one has the case of a patient with fever, headache, and vomiting, but without any definite signs on examination. In spite of the temperature being high, there is little or no acceleration of the pulse, respiration is quiet, after a few days the temperature falls, the headache becomes less, and the patient is convalescent. What is the nature of such a case? It may be designated "influenza," and few would deny that it may be due to the influenza bacillus. If a lumbar puncture is performed the cerebro-spinal fluid may be found to be turbid and contain meningococci, but the case gets well whether lumbar puncture is done or not, and few practitioners would wish to subject their patients to the inconvenience of a lumbar puncture for a slight febrile attack, and yet such an attack may be the onset of an acute meningitis.

In infants and young children, again, the symptoms and course of the disease often make it most difficult to diagnose. In severe cases with a rash, profound coma, and rigidity of the limbs there is no difficulty. When, however, a rise of temperature is the only sign of illness the difficulty is considerable, and diagnosis can only be made by lumbar puncture and examination of the cerebro-spinal fluid. It must not be thought that such cases are exceptional, they are probably far from rare and pass undiagnosed. In infants blindness is a frequent concomitant of the disease, whilst in adults deafness is more frequent.

As the disease passes into a chronic stage retraction of the head and neck may occur, and in infants marked opisthotonos is a striking feature. In the endemic form occurring annually in London there is a mortality of about 50 per cent., 35 per cent. are left with some mental defect, hemiplegia, diplegia, hydrocephalus, or blindness, whilst only 15 per cent. recover completely. In the epidemic form the mortality varies from 90 per cent. in the earlier period of an epidemic to 30 to 50 per cent. towards the end of the period. These figures are based on the occurrence of the disease before the introduction of serum treatment which has profoundly modified the mortality.

It is known that there are several strains of meningococcus which vary in their infectivity, and that the endemic strain is commonly less virulent than the epidemic—on the other hand, as severe cases do occur with the one strain as with the other.

Diagnosis.

In some cases the symptoms are so distinct that diagnosis is perfectly easy, the headache, vomiting, rash, fever, rigid neck, and flexed limbs giving a clinical picture which is unmistakable. Symptoms similar to the above may be present in other forms of meningitis or in poliomyelitis, and there is only one method of making the diagnosis certain, and that is by lumbar puncture and examination of the cerebro-spinal fluid. Now lumbar puncture is perfectly simple if performed with an instrument suitable to the age of the patient, the patient in the right position and in the right manner. If properly carried out it gives rise to but little pain, and in many cases it is quite unnecessary to give an anæsthetic.

It is impossible here to go into the technique of a lumbar puncture, but failure to reach the canal or obtain the fluid rarely occurs when the puncture is rightly performed. It is advisable that the patient should be in a recumbent position, lying on the right side with the legs flexed and the back bent, and that a fine needle with a stilette be used. If a large needle is used it is much more painful and in young children will not pass the space between the laminæ. Some lumbar puncture needles that I have seen are unnecessarily large. It is important to avoid touching the bone if possible, it always gives rise to more pain, and is likely to cause bleeding into the needle which may block it or contaminate the cerebro-spinal fluid and spoil the cytological examination.

The cerebro-spinal fluid spurts out under pressure. Sometimes it is so thick that it will not flow through a fine needle, but comes out readily under gentle aspiration. All degrees of turbidity are met with, from a slightly opaque to a thin creamy fluid. It is said that the fluid from some cases may be perfectly clear and yet contain meningococci. I have never come across such a case, but they have been recorded by Netter and others. It is recognised that the cerebro-spinal fluid from a case of meningococcal septicæmia may be perfectly clear, and the patient may die from the disease before the cerebro-spinal system is affected. The albumin in the fluid is increased from 0·02 to 0·2 or even to 1 per cent.; the cells are mostly polymorphonuclear in character and the meningococcus can be seen within and outside the cell. The normal sugar reaction of the fluid is absent.

As the case progresses and improvement takes place the fluid becomes clearer, the meningococci less frequent, the cells less numerous and changed in character, so that in the later stages of the disease the greater proportion of the cells are lymphocytic.

Treatment.

Having made the diagnosis treatment should be simple if we accept the experimental and statistical evidence produced by Flexner with regard to the use of serum. The mortality which in untreated cases amounts to 70 to 80 per cent. is brought down to from 25 to 27 per cent. Unfortunately there are various strains of the meningococci, and the serum obtained from a horse immunised against certain strains of meningococci is not potent against all strains. It is, of course, possible always to add one more strain to a horse already immunised, for I believe that such a horse receives about every 14 days a further injection of meningococci, so that the serum of the horse may be made polyvalent to any number of strains. Flexner showed that subcutaneous and intravenous injection of the serum had no effect in diminishing the mortality in cases of meningitis.

Methods of Treatment.

The following methods of treatment will be discussed:—(1) Lumbar puncture; (2) intrathecal injection of serum; (3) treatment with soamin; and (4) vaccine treatment.

1. *Lumbar puncture.*—This alone is often of considerable value in treating cases of cerebro-spinal meningitis. It frequently relieves many of the acute symptoms. It may be repeated on several days in succession with advantage; it is also of value in estimating the progress made by the meningitis. Combined with this, irrigation of the spinal canal with normal saline solution may be used. This injection can be done either with the syringe or by gravitation method with a funnel and rubber tube attached to the lumbar puncture needle. It is important to watch the pulse whilst the fluid is being run into the canal and to avoid any increase in the cerebro-spinal pressure.

2. *Intrathecal injection of serum.*—There are several points to be considered in the intrathecal injection of serum. First, what serum should be used. There are various sera on the market prepared by Flexner, Lister Institute, Mulford's, Burroughs and Wellcome, Parke Davis, &c. Flexner's (now prepared by the Department of Health, New York) I have used most frequently. Some of the others I have used, but it is most difficult to appraise the value of the serum, for it may not be antitoxic to the special strain of meningococcus with which one is dealing.

Injection of the serum.—Lumbar puncture is performed and the spinal fluid is allowed to flow out. The quantity that flows away must depend on a variety of circumstances—the age and size of the patient, the amount of pressure, but at least 20 to 30 c.c. should be obtained. Sometimes it flows out so readily that 4 to 5 ounces are obtained.

Sophian insists on the value of watching the blood pressure whilst the fluid is flowing away, and if there is a fall of more than a few millimetres stop the flow and begin to inject the serum. The injection of the serum does not, however, tend to raise the blood pressure, but tends to make it fall still further, so that from the time of the lumbar puncture to the completion of the injection of the serum there may be a drop of 20 to 30 mm. of mercury. Sophian is entirely guided by the blood pressure as to the quantity of cerebro-spinal fluid removed and the quantity of serum introduced—and any pressure in injecting the serum produces a rapid fall of blood pressure. The amount of serum introduced must vary according to the age of the patient. In young children 10 c.c. can usually be introduced, whereas in adults 20 to 30 c.c. or more can be introduced.

Method of introduction.—The usual method of introduction is by a syringe, and having always used this method I am of opinion that the pressure exerted can easily be regulated. On the other hand, Sophian insists on the advantage of giving the serum by the gravitation method and controlling its administration by the blood pressure. He says: "My ordinary procedure in an adult case, beginning with an average blood pressure of 110 mm. of mercury, is to stop the further withdrawal of fluid if there is a moderate drop in blood pressure, for example, 10 mm. of mercury; in children 5 mm. If there is no change in the blood pressure the fluid may be allowed to flow away till the normal pressure is reached, roughly estimated by counting the drops of fluid as they flow from the needle. One drop of fluid every 3–5 seconds corresponding to a normal pressure."

The serum having been carefully warmed to the body temperature is now injected. The blood pressure drops and continues dropping steadily as the larger quantity of serum is injected. After there has been an initial drop of 20–30 mm. of mercury the blood pressure begins to drop relatively much faster if more serum is injected. Thus if 15 c.c. of serum cause a drop of 20 mm. of mercury in the blood pressure, injecting only a few more c.c. of serum may cause a sudden drop of 40 more millimetres, making a total drop of 60 mm. The gravitation method of administering serum is excellent, but in practice it is not easy to carry out nor to control by blood-pressure observation, and the syringe method is to me more convenient. The quantity of serum injected must be regulated by the condition of the patient; if it flow in easily 20 c.c. is an average dose. After the serum has been injected the patient should be tilted so that the head is lower than the buttocks, in order to allow of the serum, which is of greater specific gravity, gravitating towards the brain.

How many and how often should injections be given?—As soon as the diagnosis has been made the first injection should be given, and this should be repeated every 24 hours and the fluid examined on each occasion. The important indication for the continuation or discontinuation of injection is the number of organisms present in the fluid. At first they are numerous, intra- and extra-cellular; later they become intracellular and finally disappear. As a rule, four to six injections are required to bring about the result, and this is the number which Flexner advises. The opacity of the fluid cannot always be taken as a guide; as a rule it becomes less turbid, and a fluid which rapidly becomes clear is an indication of good prognostic value.

It is, I think, a mistake to go on with frequent injections of serum after the acute stage of the disease has subsided. Lumbar puncture by itself will often relieve the symptoms, and it is advisable to do this from time to time both for this purpose and also to see the condition of the cerebro-spinal fluid.

3. *Use of soamin.*—Soamin was introduced in the treatment of trypanosomiasis about 1907, and about this time was used in the treatment of syphilis. Dr. George Low used it with success in the treatment of cerebro-spinal meningitis in Africa, and has advocated its use for the disease in this country. It is administered in 1 to 3 grain doses dissolved in water and injected intramuscularly on alternate days. For the treatment of acute meningococcal septicæmia it would seem a rational method of treatment, but it is difficult to see how it can have an effect on a meningitis. The greatest objection to its use is, however, its toxic effect in producing optic atrophy and blindness. Not a few cases of such blindness were produced by the use of the drug when it was given for syphilis in 1908 and 1909.

It is sometimes argued that any remedy must be used in such a severe disease as cerebro-spinal meningitis, but recovery with loss of sight must, I fear, be regarded as a greater disaster than death. It is stated that there is no case on record where optic atrophy has been caused by less than 60 grains and that this is then a safe total amount to be given. Considering what liability there is for the optic nerve to be affected by the disease itself I should personally feel disinclined to use a drug which tends to produce optic atrophy. If it is desired to use an arsenic preparation I would suggest salvarsan or neosalvarsan. Both preparations have had a long trial and do not appear to produce optic atrophy.

4. *Vaccines.*—The discussion on the use of vaccines in the treatment of the disease has been assigned to Dr. Colebrook, and I will not encroach on his sphere of action. I hope, however, he will make quite clear the possible value of vaccines in the prevention as distinct from the treatment of the disease.

Harley-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THE PSYCHOLOGY OF TRAUMATIC AMBLYOPIA FOLLOWING THE EXPLOSION OF SHELLS.

By HUGH S. PEMBERTON, M.B., CH.B. LIVERP.,
LIEUTENANT, R.A.M.C.

THE paper by Mr. J. H. Parsons in THE LANCET of April 3rd on the above subject has reminded me of a case under my care which presented several features of psychological interest. The facts are as follows.

Sergeant ——, belonging to a battery of field artillery under my medical charge, was working his gun under rather heavy shell fire on March 14th. His gun was No. 1. A direct hit was made on No. 2 gun with high-explosive shell, killing three men. I saw Sergeant —— shortly afterwards, and although naturally excited he appeared otherwise normal. He went on working his gun until dawn the next day, when he collapsed and was found lying across one of the disembowelled corpses. In all he had been at work for about 12 hours continuously, during which time the battery had fired between four and five hundred rounds. I saw him again a few hours later; he was conscious but very feeble, and obviously much shaken. There was considerable amblyopia and distinct contraction of the fields of vision (rough test); no change in colour vision. The sense of taste was much blunted; he could barely distinguish between salt and powdered quinine tablets laid on the tongue. The sense of smell was practically absent, but this was not of much importance, as he stated that his smelling powers were at all times small. Hearing was naturally much affected, but not more so than that of several other men in the same battery; no tympanic fractures were discernible. There were no changes of cutaneous sensation in the face, arms, or trunk, but both thighs, from about the apex of Scarpa's triangle to the knee, showed curious alterations. There was partial anæsthesia—that is to say, a normally painful pin-prick was felt as a tactile sensation, while touching the skin lightly with cotton-wool was not felt at all. The patient merely complained of "numbness" in these areas. The motor changes were not striking; he naturally showed great fatigue in practically every muscle; the eyelids were half-closed, but there was no nystagmus. On the other hand, he walked slowly with a distinctly spastic gait; the knee-jerks were brisk. Other reflexes appeared normal; the plantar reflex was of the flexor type. I sent him back to the wagon lines for a week where, while the sensory changes gradually disappeared, symptoms of mental distress seemed to increase. He still walked feebly and spastically, and reverted continually to the sight of the dead men at the next gun, one of whom was a friend of his. I finally sent him into hospital and he is now, I believe, in England.

There are several obvious factors in the production of such signs and symptoms. 1. Excitement during a prolonged and somewhat critical attack. 2. Over-stimulation of eyes and ears. The flashes of night firing are very brilliant, while many batteries close together and all firing rapidly invariably produce temporary deafness among the gunners. 3. Some natural fear from close hostile bursts. 4. Disgust at the sight of the killed, two of whom were decapitated and one disembowelled. 5. Great physical and mental fatigue from continuous laying of the gun during 12 hours.

But why these factors, which must have been operative to some degree at least in all those near, should produce those results in this particular man I leave it to others to attempt an explanation.

On Active Service.

NOTE ON A CASE OF CEREBRO-SPINAL MENINGITIS:

THE TENACITY OF THE MENINGOCOCCUS.

By HENRY J. ALFORD, M.D. LOND.,
MEDICAL OFFICER OF HEALTH OF TAUNTON.

THE following case may be of interest in showing the length of time that the meningococcus may be found in the naso-pharynx after apparent recovery from the disease.

A case of cerebro-spinal meningitis was notified to me on March 2nd, 1915, on the morning of which the patient died, after an illness of five days. He was a boy, aged 9 years. On making inquires into the case I found that his elder brother had returned from Deal (on his discharge from the army) on Feb. 13th. He complained of feeling ill, with pains in his head and limbs, and he went to bed, sleeping in the same bed as his younger brother already mentioned. In about a week he felt quite well and returned to his work in this town. On March 31st I took a swab from his naso-pharynx and sent it immediately to the County Bacteriological Laboratory at Weston-super-Mare, and on April 4th I received a certificate from Dr. W. G. Savage stating, "Meningococcus present."

The case is interesting as showing that although the germ will only live a few hours on the swab, it may do so for at least two months in the naso-pharynx

Taunton.

A "FLY-DANGER" EXHIBITION.—There will shortly be opened at the Zoological Gardens, Regent's Park, London, N.W., an exhibition for the purpose of demonstrating to the public the best ways of combating the danger which arises from the disease-carrying habits of the house-fly. Traps of all kinds will be shown, and the preventive measures to be taken where it is necessary to collect manure heaps for garden and horticultural purposes indicated.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF MEDICINE.

Leukæmia.

A MEETING of this section was held on April 27th, Dr. A. E. GARROD, Vice-President, being in the chair.

Dr. A. J. HALL read notes of a case presenting symptoms of Lymphatic Leukæmia of acute onset terminating in complete recovery. The patient, a man aged 26 years, consulted his medical attendant in March, 1911, on account of swelling of the glands on the right side of the neck. He stated that he had noticed this coming on for a few days previously, but as it had given him no pain he did not seek advice earlier. During the next few days the swelling gradually increased and became slightly painful. He also felt shivery and out of sorts towards the late afternoons so that he went to bed early. During the last few nights he had been hot and sweated. At this time he did not complain of any sore-throat, nor could any cause be found for the glandular enlargement. Slight albuminuria was present, otherwise there was nothing abnormal. When seen by Dr. Hall six days later there was a large mass of glands in the right side of the neck extending from the clavicle to the edge of the jaw. Individual glands could be distinctly felt, fairly soft, but not discrete. They were painless and not tender on palpation. Besides this mass, solitary enlarged glands could be felt on both sides of the neck, both axillæ, and both groins. They were all firm and painless. The spleen was felt about three-quarters of an inch below the costal margin. He did not look anæmic. There was no sore-throat; his teeth were in good condition. There were no hæmorrhages. A blood examination showed: Hæmoglobin, 96 per cent. (Haldane); red corpuscles, 5,400,000; leucocytes, 32,000; lymphocytes, 96 per cent.; and polymorphonuclears, 4 per cent. No eosinophiles were seen, and there were no evident changes in the red cells. He had some pain in the glandular mass. His temperature was 101° F. in the evening. A provisional diagnosis of acute lymphatic leukæmia was made, and he was put on to liquor arsenicalis. After two days the glands were smaller and the patient complained for the first time of sore-throat on the right side. Later, vomiting occurred. A differential count was as follows: Large lymphocytes, 85·2 per cent.; small lymphocytes, 4·4 per cent.; and polymorphonuclears, 10·4 per cent. No eosinophiles were seen in counting 300 cells, nor were there changes in the red cells. The right tonsil became more painful and was covered with an exudate. The spleen extended lower in the abdomen. After this the improvement was steady and continuous week by week. In July the glands were only just palpable, and the spleen could hardly be felt. In August he was able to go shooting. From that time to the present he had remained in excellent health. Dr. Hall remarked that at the time of the acute onset the diagnosis of acute lymphæmia was provisionally made. The absence of severe anæmia, great prostration, and any tendency to hæmorrhage, together with the rapid and complete recovery, which had remained uninterrupted for four years, suggested that such provisional diagnosis was incorrect and that the case belonged to the category of lymphocytosis associated with cervical and general adenitis, to which attention had been more recently drawn. The existence of such cases should make our prognosis somewhat guarded in atypical cases suggesting acute lymphæmia.

Dr. HALL also narrated some cases of Myelogenic Leukæmia. 1. A case of chronic myelæmia treated by X rays in which, after a severe exacerbation, complete subjective recovery took place enabling the patient, a man aged 34, to perform his full work as electrician in a colliery for nearly three years. After this another severe exacerbation occurred lasting for three months, in which the liver became enlarged, with ascites; choked discs occurred on both sides with impaired vision and some hæmorrhages. With further X ray treatment all these symptoms disappeared and he had a further period of five months with complete subjective recovery and was able to continue full work. A third acute exacerbation followed ending in death about five months later. Particular stress was laid upon the long duration of the patient's first improvement, and the complete, though short, subjective recovery after the second exacerbation, when his leucocyte count was never below 300,000 and sometimes more than double that, and the spleen and liver were much enlarged. 2. Chronic myelæmia treated by X rays, with complete restoration to working health for about six months. During this time the leucocytes dropped to normal and remained so; the spleen from being extremely large was only just palpable. The patient died after a few days' acute illness which was called "pneumonia." 3. A chronic myelæmia in a woman, in whom the very large spleen had become completely dislocated so as to rest on the floor of the pelvis and form a large median tumour rising up into the abdomen and reaching above the navel. In the absence of a blood count the tumour had been diagnosed as pelvic in origin, and an exploratory laparotomy performed. Dr. Hall also spoke of a case of acute leukæmia associated with very severe and persistent pains in the bones.

Dr. F. PARKES WEBER read a short paper on an instance of Long Quiescence of Leukæmia. The patient, then aged 63, sought hospital advice in March, 1909,[1] for what she described as "bearing-down pains," "as if she were going to have a child." These pains seemed to come on when she became fatigued from walking, &c. Nothing abnormal was detected by gynæcological examination, but the spleen was found to be greatly enlarged, extending downwards decidedly beyond the anterior superior iliac spine. The liver could not be felt. The inguinal lymphatic glands were moderately enlarged on both sides, the axillary glands (on both sides) could only just be felt, and the cervical glands were apparently not enlarged at all. From March 16th to May 27th, 1909, the patient was in the German Hospital for treatment by atoxyl injections and radium applications (Dr. N. S. Finzi). The spleen distinctly decreased in size under the treatment, and the lymphatic glands in the groins became scarcely larger than they are in some healthy individuals. On Dec. 6th, 1909, the spleen did not quite reach the level of the anterior superior iliac spine. The following table shows the results of blood examinations up to the end of the year 1909:—

—	March 4, 1909.	March 29, 1909 (before radium treatment).	May 26, 1909 (after radium treatment).	Dec. 6, 1909.
Red cells per cubic millimetre of blood	4,100,000	4,176,000	3,800,000	5,740,000
Hæmoglobin per cent... ...	80	—	75	82
White cells per cubic millimetre of blood	57,000	43,200	12,000	47,120
Differential Count of White Cells per cent.				
Lymphocytes...	94·0	99·0	84·0	89·4
Neutrophile polymorphonuclears	0·8	0·5	14·0	10·0
Large hyalines	2·4	—	—	—
Intermediates...	2·8	—	—	—
Eosinophiles	0	0·5	2·0	0·2
Basophiles	0	—	—	0·4

The differential count on March 4th was kindly made by Dr. A. E. Boycott. Both eosinophiles and mast-cells were found, though none were present amongst the cells counted. The red cells appeared normal. No nucleated red cells were ever noted. Dr. Weber was able to examine the patient again on Dec. 4th, 1911, when she complained of rheumatic-like pains in her feet, but looked well. The inguinal glands were moderately enlarged on both sides, and the spleen could be felt extending down to below the anterior superior iliac spine. Blood examination (Dr. G. Dorner): Hæmoglobin, 70 per cent.; red cells, 5,380,000 per cubic millimetre of blood; white cells, 95,600. The differential count of white cells gave: Polymorphonuclear neutrophiles, 3·2 per cent.; lymphocytes, 96·6 per cent.; eosinophiles, 0·2 per cent. The erythrocytes appeared normal and no nucleated red cells were seen. In March, 1914, owing to the kindness of Dr. Garrod and his house physician, Dr. A. Geoffrey Evans, Dr. Weber examined the patient again while she was temporarily in St. Bartholomew's Hospital. She looked much the same as before, and complained of a little giddiness. A medical man, who had chanced to notice the enlarged spleen, had sent her to the hospital. The blood count showed: Hæmoglobin, 77 per cent.; red cells, 5,160,000 per cubic millimetre; white cells, 123,800. A differential count of the white cells showed that 96·5 per cent. were lymphocytes. Dr. Weber said that looking back on this case it appeared doubtful whether the symptoms which from time to time induced the patient to seek medical advice had any causal connexion with her chronic lymphocytic leukæmia, although in 1909 a real improvement was perhaps associated with the reduction in the size of the spleen by the radium and atoxyl therapy. In chronic lymphocytic leukæmia extreme enlargement of the spleen, as in this case, was an unusual feature, and perhaps the absence of anæmia had some prognostic importance. Might not this absence of anæmia be taken as showing that the red bone-marrow was not overwhelmed by the leukæmic disease, and that (in spite of the leukæmia) it remained able to maintain its normal erythropoietic activity, which was so essential to the well-being of the whole organism? It was quite conceivable that cases similar to the present one occurred in which the total number of white cells was much less than in it. The possibility of such a case being one of so-called "Banti's disease" (an example of permanently or temporarily "compensated" Banti's disease, without any considerable anæmia) might arise, but he believed that in all cases of chronic "Banti's disease," as well as in practically all cases of chronic splenomegaly, apart from the leukæmias, the tendency was towards a leucopenic blood count rather than towards an excess in the number of white cells. A condition of chronic splenomegaly combined with a numerical excess of white cells should always arouse a suspicion of the case being one of chronic leukæmia (in a more or less quiescent state).

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[1] See F. P. Weber, Case of Chronic Lymphocytic Leukæmia without Anæmia, Transactions of the Medical Society of London, 1910, vol. xxxiii., p. 364.

Sir William Osler, who had seen Dr. Hall's case, said that it presented the clinical features of acute leukæmia, and the examination of the blood corresponded. He could not remember having seen a case with a lymphocyte count above 90 per cent. The only characteristic feature absent from the symptoms of Dr. Hall's case was purpura.

Dr. James Galloway said that he had had many opportunities of seeing the effects of treatment by means of X rays. The most striking result had occurred in the first case he had had treated in this way. It was one of myelæmia, the patient being extremely ill. The amount of improvement was wonderful and the patient lived for five years. Ultimately all the hæmopoietic processes seemed to cease and all the blood cells diminished. He had discovered no means of determining which cases were likely to be benefited by X ray treatment and which made worse. He also could remember a case in which mental symptoms developed resembling those of acute alcoholism.

Dr. W. Ironside Bruce spoke of the methods which he employed while treating such cases with X rays. He used a felt filter, for without a filter skin changes were sure to follow. The same reduction of the white cells occurred with the filter as without it. He preferred large infrequent doses rather than small continuous ones, and awaited the result of each dose. He made a practice of keeping the number of white cells as nearly as possible at 40,000; below that number they often dropped suddenly. He had not found that exposing the ends of the long bones, either alone or together with exposure of the spleen, was more beneficial than exposure of the spleen alone to the action of the rays. Speaking of the results of this form of treatment, he said that an effect was usually noticeable in the blood after two or three weeks. Improvement occurred in the patient's condition even in the absence of a fall in the leucocyte count. He did not think that the treatment influenced the ultimate prognosis, but the temporary improvement was very encouraging.

Dr. Parkes Weber was of opinion that no case of leukæmia had ever been cured. He took the view that Dr. Hall's case was not one of acute leukæmia but of lymphocytosis due to infection. The nature of the infection in such cases was unknown.

Dr. Hall, replying to the discussion, commented on the absence of any reference to benzol treatment, and stated that in the only case he had tried it the result had been disappointing. There was a slight diminution of leucocytes for a short time after first giving it, but this was not maintained.

SECTION OF DERMATOLOGY.

Exhibition of Cases and Specimens.

A meeting of this section was held on April 15th, Dr. J. J. Pringle, the President, being in the chair.

Dr. G. Pernet showed a Rodent Ulcer of three years' duration, in a man aged 26, and commented on the early age at which it had commenced.—The President, Sir Malcolm Morris, and Dr. J. H. Sequeira referred to similar cases seen at a less advanced age.

Dr. Pernet also brought forward a young man who exhibited extensive picric acid staining of the skin and hair due to his work, which was that of filling high-explosive shells.—Dr. S. E. Dore, Sir M. Morris, and Dr. A. M. H. Gray referred to the discolouration of the urine sometimes caused by the absorption of picric acid in the treatment of ringworm, burns, and other skin conditions, but which generally was unaccompanied by constitutional symptoms, but Dr. H. W. Barber recorded one case in which toxic symptoms occurred in a child.

Dr. Graham Little exhibited an Ulcer on the Foot due to several closely repeated X ray applications for a wart on the sole which had been administered by a layman. He asked for suggestions as to prognosis and treatment.—A general discussion ensued as to the value of X rays in the treatment of warts, in which the President, Dr. W. K. Sibley, Dr. H. G. Adamson, Dr. Dore, Dr. Pernet, Dr. J. M. H. MacLeod, Dr. Sequeira, and Dr. P. S. Abraham took part, various opinions being expressed as to the value and limitations of the procedure.

Dr. Little also brought forward a case of Folliculitis Decalvans of the Scalp of several years' duration in a lady aged 55, who also presented the condition of keratosis follicularis of about six months' duration in the axillæ, bends of the elbows, groins, and back; the latter lesions simulated those of Darier's disease, but the association with lesions of the scalp had not, as far as he knew, been reported.—The President, Sir M. Morris, Dr. Sequeira, and Dr. MacLeod, while agreeing with the diagnosis of folliculitis decalvans, were inclined to adopt the view that the lesions on the body were probably early Darier's disease, but Dr. Adamson expressed the opinion that the lesions of the latter disease were not essentially follicular.

Dr. Sequeira brought forward a patient suffering from Gummatous Syphilis and Diabetes Insipidus. He referred to several similar recorded cases as supporting the view that diabetes insipidus was commonly of syphilitic origin.—Mr. J. E. R. McDonagh pointed out that this correlation was more marked in congenital than acquired syphilis. He was inclined to attribute the condition to arterial disease.—Dr. Parkes Weber and Dr. Kinnier Wilson accentuated the relationship of diabetes insipidus to syphilis, the latter suggesting that the pathogenesis of the condition was a certain degree of basal meningitis with pressure in the floor of the third ventricle in the region of the pituitary body.

Dr. Wilson and Dr. Dore exhibited a case shown at a previous meeting of a man who had lived in the tropics and who had various patches of thermo-anæsthesia and other indications of a peripheral neuritis, as well as bullæ on the feet and thickening of the skin of the hands with nail changes. In their opinion the bulk of evidence favoured the diagnosis of leprosy.—Dr. Pernet accepted the suggestion of the exhibitors, but Dr. Abraham and Dr. MacLeod thought that further evidence ought to be adduced before accepting so grave a diagnosis.

Dr. Dore showed cultures from a case of Favus, which were discussed by Dr. MacLeod and Dr. R. A. Bolam.

Dr. Sibley demonstrated a typical case of Epidermolysis Bullosa or congenital tendency to the formation of bullæ from trivial injury in a woman aged 50. He referred to an apparently identical condition developing after traumatism during adult life.—The case exhibited was discussed by the President and Dr. Adamson, who had seen it on several occasions during the previous 17 years.

Dr. SEQUEIRA exhibited two Polish children with very extensive Favus of the scalp and trunk.

Dr. HALDIN DAVIS showed a girl with extensive Ulceration of the Face and Nose due to congenital syphilis, and asked for opinions as to the value of salvarsan and neo-salvarsan in such cases.—Dr. BOLAM, Dr. MACCORMAC, Dr. GRAY, and the PRESIDENT strongly advocated the use of salvarsan when the ulceration was active, but Dr. SEQUEIRA thought the administration of mercury by inunction and potassium iodide internally would be equally efficacious.

Dr. A. DOUGLAS HEATH presented a case of very unusual, extensive, deeply Pigmented and Atrophic Lichen Planus in a man, aged 56, which was said to have developed at the age of 3 months. On the hands the lesions were verrucose. Fresh lesions, which were constantly developing, were characteristic lichen planus papules, but there were no lesions of the mucous membranes.—Dr. Heath's views were generally accepted by the PRESIDENT, Dr. DORE, Dr. ADAMSON, and Dr. MACLEOD.

Dr. SEQUEIRA and Dr. JENKINS OLIVER showed cultures of Microsporon Ringworm from mother and child.

NORTH STAFFORDSHIRE MEDICAL SOCIETY.—A meeting of this society was held on April 15th at the North Staffordshire Infirmary, Dr. John Russell, the President, being in the chair.—Mr. A. W. Gill showed three cases of Congenital Heart Disease in children aged respectively 4, 8, and 9 years.—Mr. R. Alcock showed: (1) Sarcoma of Knee (pathological specimen); (2) Melon Seed Bodies from Compound Palmar Ganglion (pathological specimen); (3) patients undergoing treatment with Salvarsan; and (4) a case of Malignant Pustule.—Mr. S. McMurray showed cases of Congenital Nystagmus and Miner's Nystagmus.—Mr. W. Webster showed: 1. A woman exhibiting Sulph-hæmoglobinæmia or Enterogenous Cyanosis. 2. Two brothers with Myopathy of Pseudo-hypertrophic Type. 3. Large Tumour of Brain in Inferior Parietal Region, which gave rise to no localising symptoms. When the brain was removed post mortem a large gliosarcoma in the inferior parietal region was found. 4. A case of a young woman with Amyotrophic Lateral Sclerosis of Charcot. 5. Two Prostates removed by Freyer's method.—Dr. Harold Hartley exhibited patients suffering from (1) Secondary Cancer of Cervical Glands; (2) Lymphosarcoma of Neck; (3) a Myxoma of Bone (pathological specimen); and (4) a pathological specimen illustrating the complete operation for removal of a cancer of the breast.

LONDON DERMATOLOGICAL SOCIETY.—A meeting of this society was held at St. John's Hospital on April 20th, Dr. W. Knowsley Sibley being in the chair. At the clinical meeting which followed a series of cases were shown by Dr. Morgan Dockrell, Dr. J. L. Bunch, Dr. Sibley, Dr. Simonds Gooding, and Mr. C. H. Mills.—Mr. C. R. Kempster read a paper entitled "The Inhibitive Action of X Rays upon Malignant Growths," and showed a case of epithelioma affecting the tip of the nose which had been entirely cured by a few exposures to the X rays. He also exhibited photographs and microscopical specimens of a case of epithelioma of the leg which had also been cured by the X rays.—Dr. Dockrell, Dr. Sibley, and Dr. Gooding joined in the discussion.

ROSYTH AS A GARDEN CITY.—The construction of the Rosyth Naval Base had not proceeded far when the need for permanent dwellings in the vicinity of the works became apparent, and this need has grown more urgent as the scheme progresses towards completion. A desire was early shown to make Rosyth a community which should be free from the more sordid housing features that are found in most industrial centres, and negotiations to develop the area on garden city lines were carried on by local authorities, interested proprietors, and the Admiralty. A start is to be made in the near future by the Scottish National Housing Company, which is to build up 270 acres on lines approved by the Admiralty. As an initial step the company will put in hand 150 houses, to be rented at figures varying from £16 to £25, and architects have been asked to submit sketch plans for the scheme. The company's aim is to have the houses ready by October, and it is intended to erect about 3000 houses within the next five or six years.

Reviews and Notices of Books.

An Introduction to the Study of the Endocrine Glands and Internal Secretions.

By Sir EDWARD SCHÄFER, Regius Professor of Physiology, University of Edinburgh. Leland Stanford Junior University Publications. University Series. 1914. Pp. 94. Price 75 cents.

THIS monograph is published by Stanford University, California, and in it we have the Lane medical lectures delivered in 1913. Professor Schäfer is not, by the way, "Regius" professor, for the professor of physiology in the University of Edinburgh is appointed not by the Crown but by the curators of the University.

There is no one more competent to deal with endocrine glands than Professor Schäfer, who has contributed much to our knowledge of what was once a heterogeneous grouping of so-called ductless glands. The five lectures deal with (1) general considerations regarding internal secretions and the organs which furnish them; (2) the functions of the thyroid apparatus; (3) of the adrenal apparatus; (4) the pituitary body; and (5) the internal secretions of the pineal gland, of the alimentary mucous membrane, of the pancreas, and of the sexual glands.

The term "endocrine gland" is used by the author to indicate "an organ which is known to form some specific chemical substance within its cells and to pass this directly or indirectly into the blood stream." Instead of the term "internal secretion" the author uses the term "endocrine" to denote substances of a specific nature like the active chemical agents which are produced by the ductless glands. Specific active chemical agents are also passed into the blood by organs other than ductless glands—e.g., the pancreas. The author introduces certain new terms. As endocrine glands produce substances which cause depression or cessation of function as well as those that excite function—hormones—for the former the term chalone, from a Greek word "to make slack," is introduced. *Chalone* is "an endocrine product which inhibits or prevents the activity of an organ or tissue, as distinguished from a *hormone*, which excites the tissue to increased activity." The term hormone he employs in the sense in which it is used by its inventor. There is more nomenclature as represented by the general title "antacoid substances" or simply "antacoids." These are specific organic substances formed by the cells of one organ, which pass into the blood to produce effects upon other organs similar to those produced by drugs.

Descriptive details necessarily make up a large part of the text, but here and there the author offers much critical and suggestive comment. In Lecture II., which deals with the thyroid apparatus, we have additional new nomenclature. "The antacoid of the parathyroid ('parathyrine') is probably of chalonic, i.e., of inhibitory nature." The term "thyrine" is used to denote the active principle of the thyroid, "whether it is identical with, or contained in, the iodo-thyrin of Baumaunn or not." Another suggestion is made regarding the "chromaphil substance" of the medulla of the adrenals. As adrenalin "has a commercial attachment it is better to employ the neutral expression *adrenine* in place of it." The hypothetical antacoid supposed to be derived from the islands of Langerhans of the pancreas is called insuline.

The monograph gives an admirable, comprehensive, critical, and suggestive, yet not too diffuse account of the problems and practical importance of the now vast field associated with the terms ductless glands and internal secretions. There are no illustrations and but few references to the vast literature of the subject. There is neither preface nor index, but only the subject matter of the lectures themselves.

The Commoner Diseases, their Causes and Effects.

Translated from the German of Prof. Dr. L. JORES, of Marburg, by W. H. WOGLOM, M.D., Assistant Professor in Columbia University, N.Y. With 250 figures in the text. London and Philadelphia: J. B. Lippincott Company. 1915. Pp. xvi. + 424. Price 16*s*. net.

IN 1913 Professor Jores, at that time professor of pathological anatomy at Cologne, published an excellent volume containing 34 lectures on pathological anatomy, entitled "The Anatomical Bases of Important Diseases." This has been translated by Professor Woglom with considerable freedom, as his rendering of the German title *Anatomische Grundlagen wichtiger Krankheiten* may be taken to show, and with substantial success.

The lectures cover a great deal of ground, but are not unduly long or drawn-out. The first three deal with morbid conditions of the blood; then follow nine on vascular and cardiac disease, embolism, infarction, and bacterial infections of the blood. Various acute and chronic diseases of the lungs are next considered; tuberculosis of the lungs and other organs is described in four lectures. Without giving further details as to the contents of the book, one may say that it gives an accurate and well-proportioned view of both general and special pathological anatomy. It is designed for advanced rather than for early students of medicine, and is admirably calculated to supply the wants of medical practitioners who wish to bring up to date their knowledge of pathology. The illustrations are numerous, well chosen, and well reproduced; they are perhaps less sharply and brilliantly printed in the translation than in the original, because the paper used in the German edition is more white and glossy. The German original forms an admirable text-book for medical students who feel it necessary to learn to read German; its matter is sound, and its style is characteristic of the average German writer.

The translation by Professor Woglom is unusually happy; he has cut up and rearranged the often cumbrous and involved sentences of the German original with great skill, yet without the sacrifice of accuracy in the rendering. The price of the translation in England is the same as that of the original.

Investigation into Scrapie.

By J. P. M'GOWAN, M.A., M.D., B.Sc. Edin., M.R.C.P. Edin. With an appendix on a case of Johne's Disease in the Sheep. Edinburgh: William Blackwood and Sons. 1914. Pp. 116.

THIS book gives a history of the disease known as "scrapie" in sheep, and contains an account of Dr. M'Gowan's researches into the malady. The funds for the investigations were furnished by the Board of Agriculture for Scotland and were administered by a committee from the East of Scotland College of Agriculture and the Board.

In 12 chapters of 111 pages the author discusses the subject, describes his experiments, and advances his conclusions. The history of the malady in Britain, the disease as it is said to occur in other countries, and the symptoms and pathology of the complaint are given, and a case of the affection as seen in Germany has a chapter to itself. The remaining chapters discuss the different stages of sarcosporidiosis, which Dr. M'Gowan considers to be the cause of scrapie. He believes that two varieties of the disease exist, one marked chiefly by itchiness and the other by paralysis.

A period of about two years has been occupied in the investigation of the disease, and the researches have been exhaustive and thorough. The history of the research work, however, seems to be better and more exact than the history given of the disease. We are not convinced that louping ill is the same disease as the one known as scrapie. Louping ill has been the subject of a somewhat close investigation in previous years, notably in 1906, when the Board of Agriculture attributed it to a large, sporulating, rod-shaped bacillus. We also believe that the French *tremblante* and the German *Traberkrankheit* are identical with what has been hitherto known in this country as louping ill and not with scrapie.

The conclusions the author comes to with reference to scrapie are: 1. That the sarcocyst is always present in the skeletal muscles of scrapie sheep. 2. Pruritus, the chief symptom of scrapie, can be reproduced in rabbits by injection into them of sarcosporidial emulsions. 3. Clinical examination of typical cases makes it probable that the paretic symptoms are due to a primary muscle lesion. 4. The marked post-mortem condition of sarcosporidiosis can alone account for the phenomena of the disease. 5. No single view can explain so well the symptoms and general features of the disease as this. Two farms during the investigations furnished cases of Johne's disease in sheep with the usual naked-eye and microscopic appearances.

Dr. M'Gowan's research is very praiseworthy, and it may be gathered from his conclusions that medicinal therapy is useless in the disease. Regeneration of the flock and slaughter of affected animals early are the measures advocated. He considers that ewes can transmit congenital infection to the offspring and that the disease is not contagious. Some other authorities consider it markedly contagious. More research work is necessary in this disease, as indeed it is into other maladies of sheep, such as braxy and louping ill.

Local and Regional Anæsthesia.

With Chapters on Spinal, Epidural, Paravertebral, and Parasacral Analgesia, and on other Applications of Local and Regional Anæsthesia to the Surgery of the Eye, Ear, Nose and Throat, and in Dental Practice. By CARROLL W. ALLEN, M.D. With an introduction by RUDOLPH MATAS. Many illustrations. Philadelphia: W. B. Saunders Company. 1914. Pp. 625. Price 25*s*.

THE work that Professor Matas has done in connexion with local analgesia is so well known that a book such as this, which is practically an extensive exposition of his practice, is sure of a warm welcome from all those interested in the subject. Without any such preliminary call upon favour this book would still deserve a wide circle of readers amongst those who practise local methods of anæsthesia, for it is a comprehensive survey of the whole matter, which is well presented in the text and illustrated by many excellent diagrams and anatomical plates. Moreover, some of the side issues of anæsthesia are treated in a particularly full and interesting manner. There is, for instance, an excellent chapter on pain and a consideration of the various theories as to its intimate nature, whether it is to be considered as a separate sensation or as always an over-stimulation of ordinary senses. The author does not arrive at any definite conclusion on the point.

A chapter is devoted to anoci-association, and here we note that Dr. Allen does not favour quinine and urea chloride because it "produces massive fibrinous exudates in the infiltrated area with occasional tendency to suppuration." In some respects the book is almost too prodigal of detail, and we think that an unnecessary amount of space is taken up with the details of experimental work in connexion with arterial anæsthesia, a form of anæsthesia having no special claims, and one which, indeed, Dr. Allen does not himself recommend. The author is fond of the combination of alkaloids, generally morphia and scopolamine, both with local analgesias and with spinal analgesia. He gives an interesting account of the attempt to produce general anæsthesia through the intravenous use of local anæsthetics, and shows how enormous doses produce only imperfect analgesia, rendering the process impossible for human surgery.

There have been several large works published recently on local analgesia. Dr. Allen's is certainly not the least large of these, nor is it by any means the least useful. Though it would be all the better for pruning, it is a thoroughly valuable work.

LIBRARY TABLE.

The Way of the Red Cross. By E. CHARLES VIVIAN and J. E. HODDER WILLIAMS. With a preface by Queen ALEXANDRA. Published for the *Times* by Hodder and Stoughton, London, New York, and Toronto. 1915. Pp. 289. Price 2*s.* 6*d.* net.—Our country is fighting not alone for victory, or in defence of her plighted word, or to help to save Europe from the ideals of Bernhardi and from German "world-power," but also for her very existence; and it may be doubted if those who have to sit at home, whether from disabilities of age or other physical infirmities, or because they are needed in some form of work, do realise all that our brethren in arms, British, Belgian, French, Japanese, Russian, or Serbian, are undergoing. In the book now before us are a series of pictures drawn with a vivid and sympathetic pen of men and women, gentle and simple, military and civilian, all "doing their bit" earnestly and heroically because it is their duty so to do. Here we see the admirable organisation at work in the offices in Pall Mall, the doings in a base hospital in France, and can read talks with patients, nurses, and medical officers, which bring home to us the blessings conferred upon the victims of war by the Red Cross Society and the Order of St. John of Jerusalem. The tear and the smile are very near together in such chapters as "The Guardsman," "Soldats Belges," "Washing Up," and many another; but the note of the book is the unwearied patience of everyone concerned, whether in the fighting line, in the hospital, in the packing shed, or in the office. "In one day," said a clerk in the base hospital, "we had 2500 wounded in and sent 700 out to the hospital ship, and it's no use trying to explain the amount of clerical work that involves. But we had to get it done. And we did it." The Red Cross Society, which cheers the broken, helps the wounded and the sick, or, if that be not possible, smooths the way of those who are to die, cannot be carried on without material, however willing the personnel; and material means money. All the profits from the sale of the book are to go to the Red Cross Fund, but more is wanted now and much more will be wanted in the immediate future. If any reader can afford to send a contribution for the work it may be sent to the publishers, Messrs. Hodder and Stoughton, Warwick-square, London, E.C., marked "The Way of the Red Cross," and will be duly acknowledged in the *Times.*

Guida per il Medico in Guerra. By Dr. P. SISTO. Pp. 184. *Guida per il Chirurgo in Guerra.* By Dr. O. UFFREDUZZI. Pp. 197. Turin: Unione Tipografico-editrice. 1915. Price 2.50 lire each.—We are not inclined to think that army surgeons will derive a great amount of help from these little books, for the reason that anyone possessed of sufficient medical and surgical education to obtain commissions in the army will find them deficient in affording information as to the most recent improvements in the methods of dealing with injuries and diseases peculiar to warfare. Dr. Uffreduzzi gives some useful details with diagrams as to the arrangement with reference to the fighting line of field ambulances, and field and base hospitals. About three-fourths of the book deals with the treatment of wounds, both generally and in connexion with special parts of the body, and does not seem to recommend the use of antiseptics except to cleanse the skin around the wound. The following passage would probably not be endorsed by many military surgeons exactly as it stands: "Swabbing the wounds with tincture of iodine is useless and harmful, as is also the use of free ablution with sublimate and carbolic acid now universally abandoned." The author gives no rules as to the principles to be followed in accordance with varying conditions, but it must be allowed that those principles are only slowly evolving. He mentions the use of iodo-benzine to cleanse the skin, but does not allude to the practice of his compatriot, Dr. Guido Cremonese, of Rome, who recommends its free use in swabbing infected wounds. We welcome the advice to give prophylactic doses of antitetanic serum in lacerated wounds soiled with earth and horse excrement, as we believe that the occurrence of comparatively few cases of tetanus with the British army now in France is mainly to be attributed to this practice. A short résumé of the respective duties of the regimental surgeon, the ambulance officer, and the surgeon at the field hospital is, in our opinion, the best and most useful part of the book.

Dr. Sisto's book is a vade-mecum of the practice of military medicine compressed into a small and quite inadequate compass. Turning to a disease which has lately been attracting a great deal of attention among military surgeons, epidemic cerebro-spinal meningitis, we find no mention of retention of urine, which occurs frequently in cases where the cerebral symptoms are comparatively slight; neither under the heading of prophylaxis, which is dismissed in two lines, is there any reference to the supervision and isolation of carriers. We notice that most of the authors quoted for reference have names suggestive of Teutonic origin.

THE LANCET.

LONDON: SATURDAY, MAY 8, 1915.

The Medical Profession and the Needs of the Army.

THE cloud in which the various phases of the war are veiled combines with the far-reaching and complicated nature of the naval and military campaign to make the easy optimism of him who finds that all is always for the best nearly as hard to bear as the outbursts of our GUMMIDGES. Those, however, who resolutely take the broad view that against a powerful enemy there have been persistently opposed obstacles which, if they have as yet not been so obviously effective as had been hoped, have none the less produced in that enemy a dislocation of plan and a failure in great objectives, will know better than to impede the responsible leaders by criticism, made for the sake of criticism, or by useless regrets. But this does not mean that we must always applaud everything that is done, or must abstain from indicating where it appears that a thing might be better done. And we think that in regard to the help that remains to be rendered by the civilian medical profession to the army there is required from the War Office a frank explanation; for there is uncertainty at present. A feeling of doubt exists in the medical profession as to the further and urgent need of medical men with the army. There should be no two opinions in the case. Sir ALFRED KEOGH has most distinctly stated that he requires more men, and we know that the War Office is willing to do all that lies in its power to render any medical help that is offered available for the army, whether that help be general or special, whether it be proffered as whole-time or as part-time engagements. But there is not as yet a very definite plan for using the medical services of any save those who accept commissions unconditionally, and this has not been made obvious to medical men who desire, if possible, to help the military authorities and their country. They have never been told what is, as a matter of fact, the thing which they principally want to know—namely, that they will have to fit into the machine in the first instance, relying later upon showing by their work that the place where they find themselves could be exchanged with advantage to the general cause.

The call on the patriotism of the medical men who are now asked to join the army is indeed very great. The higher posts have been filled and a waiting list has been established behind their present occupants. What is required is medical men to join the army regardless of their civilian position and experience, in subordinate positions and, as a rule, with great sacrifice of income. The War Office cannot offer such men any commensurate return whatever; neither rank nor pay nor facilities for clinical research can often be based upon the special attainments or equipment of any medical man accepting a commission. We feel safe in saying that a man who possesses special qualifications in some direction will in the course of internal administration be, when practicable, placed where he seems to be exceptionally fitted. A skilled operator may be sure that as soon as opportunity serves he will be doing the operating surgery in his district, and a specialist will quickly find his particular services in demand. But at the beginning the War Office finds itself unable to go into individual claims. The principle of half-time employment is recognised, but only as secondary to whole-time service, and the call is really for compliance with the general pattern of medico-military duty. It is to the patriotism of the medical man that appeal is being made, and we are sure that the response will be forthcoming, but we feel that it would come more quickly if the reasons were officially stated why the offers of assistance must be practically unconditional. This war has been from a scientific point of view a triumph for medical men, and they may well feel that they deserve generous treatment. In our forces the freedom from disease has been wonderful, and the official manifestations of pleasure at the medical work done have been both ungrudging and thoroughly well deserved. But this must not blind us to the fact that while medical officers are an integral part of the army their work is dictated by military exigencies. One example which has recently been brought forward in our columns will exactly illustrate what is meant here. A scientific surgeon, on learning that he has to send back many of his patients to other hospitals before he has been able to judge the results of his treatment, and before, in his opinion, the patients are ready to travel, naturally experiences a sense of deep disappointment; but as an officer in the army he knows that the clearing of the beds has been made necessary because other casualties are expected to pour in; these must be received, and the beds are required in which to receive them. This is not a failure of scientific surgery; it is an adaptation of means to ends. The surgeon must not feel that he is being wasted: in certain cases he might do more good, but at the expense of wider profit to the Army. And the army as a whole must remain the chief thing. We doubt if it has been put sufficiently clearly to the doctors who have made applications to the War Office without success that they, urgently as their services are required, cannot be placed in the billets where they would be most useful individually, but may have to fill berths which they think unsuitable and where the duties may not appear nearly so important as the civilian ones, which, at heavy cost to themselves, they have resigned, so as to help in the general welfare of the army.

We have before us many letters from medical men very anxious to help in the national stress, who have been kept from volunteering because they have felt that their particular services were not in request. They do not seem ever to have been told that their particular services are not sought, but their general help. They have never been urged to join the army as a patriotic action. When a general practitioner of any standing unconditionally leaves his practice and accepts a lieutenant's commission he gives up so much that he has a right to expect that the measure of his sacrifice should be recognised by the country. The doctor who joins the army occupies a special position. He is a citizen whose actual professional civilian work is useful with the fighting forces; he is a layman whose equipment is necessary for military purposes. It is not a question of asking a doctor to give up being a doctor to become a soldier; during war, as a doctor he is a soldier. When the barrister or the stockbroker joins the army it must be very seldom that his experience in law court or counting house serves him as a fighting man. His action is as patriotic as that of the practitioner who joins the Royal Army Medical Corps, but the latter costs little or nothing to train, and this should be recognised. There is no doubt that more doctors are and will be wanted for the army—signs of local plethora mean nothing. And we believe that the army will obtain the number of medical men needed, however great that number may be, and however dangerously depleted the ranks of civilian medicine may thus become. But we would urge upon the authorities that the case of many of those who will be taking commissions calls for generous appreciation of their self-sacrifice and a clear explanation of the demands made upon them.

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The Registrar-General's Report for 1913.

THE seventy-sixth annual report of the Registrar-General has recently been presented to Parliament. The document relates to the births, deaths, and marriages in England and Wales during 1913, and as it has only been available to the public within the last few days our readers will not unreasonably look for some explanation of its late appearance. In a prefatory note Mr. BERNARD MALLET expresses his regret that this report, relating as it does to 1913, should not appear until the spring of 1915, as he fully recognises the importance of prompt publication of the data in question, considered as a permanent record of vital statistics. Having regard to the delay in the issue of the two preceding reports—caused partly by the requirements of the Census and partly by the extensive changes of form and matter inaugurated in the report for 1911 — the Registrar-General hoped until recently that, the disappearance of these two causes of delay having been achieved, a much earlier publication of the present report would have been secured—not later than 12 months after the completion of the year to which it refers. The realisation of this hope has, however, been prevented by the war, which has had the combined effect of reducing the expert staff of workers in the department, and of imposing new duties on the remainder. We are assured, however, that unless the interference due to war is further increased a definite improvement may be expected in the date at which the report for 1914 will be available to the public.

In view of the special circumstances of the time the advisability of curtailing the present report was considered; but this course was, as we think wisely, rejected, because of the consideration that the value of a series of annual tables would be seriously impaired by any interruption of its continuity. Consequently, all the important tables in the last two reports have been repeated in the present. The Registrar-General expresses the opinion that while tables of primary importance ought to appear annually, and in as constant a form as circumstances permit, it will be advantageous to vary from time to time both the subject matter and the manner of treatment of other portions of the report. Whilst, therefore, matters of prime importance will henceforth be given every year, the records of other matters of less, though still considerable interest will be published for "sample years" at intervals, the subjects so dealt with being varied from year to year in order to increase their number. This is a departure which will much enhance the value of these reports. Speaking generally, the vital statistics of the year 1913 are distinctly favourable. It is satisfactory to note that both in 1912 and in 1913 the marriage-rate showed a further increase on the rate in the preceding four years, the provisional figures for 1914 indicating a still further rise. The birth-rate, however, failed to show any recovery. The death-rate in 1913, although somewhat higher than in 1910 and 1912, was otherwise the lowest on record. Apart from the effects of the warmer summer, the reduction of mortality below all previous records which characterised 1912 was maintained throughout the year now under review.

As 1913 was the last complete year preceding the outbreak of hostilities, the statistics in this report concerning the British army and navy will be studied with interest, if only as affording a basis of comparison with the less favourable figures which must be looked for in subsequent reports giving the results of the existing European War. Highly significant in this connexion is the fact that the average regimental strength of the British army was actually lower in the year under notice than it had been at any time since 1899. The health of the army, both in the United Kingdom and abroad, appears to have been maintained at a high standard. Particulars concerning the Royal Navy do not readily admit of comparison with those of the sister service. Nevertheless, the health of the service afloat is shown to have been satisfactory for several years past. Equally interesting for purposes of future comparison are the details of casualties in the British merchant service, especially those resulting from the destruction of vessels which may be expected to recur in the event of the continuance of the present conflict. From particulars furnished by the Marine Department of the Board of Trade it appears that in the year 1913 masters and seamen employed in the merchant service were more numerous than at any previously recorded period, whilst the mortality from disease, wreckage, and other casualties compares favourably with that of previous years. In this case especially the records of future years will enable some measure to be derived of the serious loss of life now being wantonly inflicted on our non-combatant sailors by the piratical conduct of the enemy.

Annotations.

"Ne quid nimis."

EFFECT OF THE SPIRIT TAX ON THE COST OF MEDICINAL COMPOUNDS.

ONE of the unintended consequences of the spirit duty has always been to impose a heavy burden of taxation on a large and important class of medicinal compounds, for alcohol is more extensively employed in the manufacture of galenical preparations than any other substance. A very high proportion of a hospital drug bill is in respect of the duty on spirit, and the same, of course, applies to a pharmacist's account with his wholesale house. This was the case under the rate of duty in force before the increased duties were proposed on spirit last week, and it is therefore obvious that the tax on spirituous medicines will be double the previous tax unless some concession is made in the case of medicinal spirits. Under the old duty a hospital using a hundred gallons of rectified spirit a year paid something like £115 in respect of the duty on alcohol, while at the new rate the duty would, of course, be £230. Some of the large London hospitals use 200 gallons of rectified spirit a year, and in exceptional cases more than this amount, so that the tax is a very serious matter indeed. In introducing his proposals in the House of Commons on April 29th the Chancellor of the Exchequer intimated that he was anxious to exempt medicinal spirits from the increased tax, and that he was endeavouring to devise a means of making an exception in the case of such spirits. In the past Mr. Lloyd George, as well as his predecessors, when urged to differentiate between potable spirits and alcohol used in the manufacture of tinctures and like preparations, has refused to do so on the ground that it has been impossible to formulate a practicable scheme to prevent fraud; but with a tax of 29*s.* 6*d.* a gallon on proof spirit and 46*s.* a gallon on rectified spirit it is urgently desirable that the Excise authorities should exercise all their ingenuity in devising a plan by the operation of which medicinal spirit may be freed from the extraordinarily heavy burden of taxation without loss of revenue by the fraudulent use of spirit. The case for a rebate of the duty on medicinal alcohol is equally strong from the point of view of the Insurance Act Drug Fund as from that of the hospitals. The problem is admittedly a very difficult one, but there is some hope that a satisfactory solution will be found.

TREATMENT OF TUBERCULOSIS.

THE Local Government Board have issued two circulars in reference to the arrangements to be made for the treatment of tuberculosis. One is addressed to the metropolitan borough councils and the other to the councils of counties and county boroughs (England). Their contents are similar. In reference to tuberculosis officers, the Board refer to the fact that some tuberculosis officers are absent on naval or military duty, and that their absence should be duly reported. Further, the councils are reminded that at the present moment it may be difficult in all cases to secure that tuberculosis officers should have the additional qualifications which were recommended. It is only right that relaxation of certain rules should be permitted at the present time, when the needs of the nation call for all medical men that can be spared; indeed, it might well be upheld that the younger officers should be encouraged to obtain temporary commissions in the Royal Army Medical Corps, their appointments being held open for them and their duties in the meantime being carried out by older practitioners. The Board also point out that they have had under consideration the question of the provision by local authorities of nursing for persons suffering from tuberculosis who are being treated in their own homes. The Board rightly recognise that the provision of skilled nursing for some of these cases forms an essential part of the treatment, and we trust that in the future suitable arrangements will be made; but it is pointed out that the need of nurses for military purposes will for the time being preclude any extension of the nursing service in this direction. Another important matter referred to is the organisation of voluntary committees for the care of patients suffering from tuberculosis. The Departmental Committee on Tuberculosis expressed the opinion that the effectiveness of the dispensary could be greatly increased by the formation of such committees consisting of representatives from the local authorities, boards of guardians, Insurance Committees, and from all charitable and social work organisations in the district. The assistance such committees could give would be great, such as the provision of additional food, change of air, clothing, suitable occupation, and so on. The circular points out that much of the work to be so undertaken would be outside the powers of local authorities, and the committees would have to rely largely on voluntary contributions. But with careful organisation the help thus afforded would be great. The experience of sanatorium officials goes to show that the ultimate result of the treatment at such institutions largely depends upon whether the patients can be placed in healthy environment and find suitable occupation after their discharge. In a large number of cases this is most difficult of accomplishment, and consequently many relapses occur. We cordially support the recommendation of the Board that such committees should be formed with as much support as possible from the borough and county councils.

FROM GERMAN MEDICAL JOURNALS.

RECENT numbers of the *Presse Médicale* have contained interesting excerpts from current German medical journals which deserve to be brought to the notice of the medical profession in England. In one of the January numbers of the *Deutsche Medizinische Wochenschrift* Dr. Loewenfeld, of Munich, a neurologist, published an article on the national character of the French and on its psychopathic traits as evidenced in the present war. He declares that the specific psychological characteristics of the French are vanity, ostentation, carelessness for truth, exaggerated emotivity, and an innate tendency to cruelty, as seen, for instance, at the time of the Terror and the Commune, and as exemplified by "the brutalities of which the Germans and Austrians have been the victims since the present war began." The delicate comments of the French editor on this profound analysis of the racial character of his people can be imagined. It is not necessary, unfortunately, to go back to the days of Tilly or Wallenstein to find proofs of German cruelty; the hecatombs of Belgium do not date back to the Terror, or even to the Commune. Yet to read the puerile communication of the German neurologist one might suppose that the deliberate and methodical application of a system of terrorisation, on a colossal scale, as an integral part of the German conception of war, advocated in all frankness by its exponents, had never even been devised, still less carried into effect. In a February number of the same journal Dr. Erich Hesse, attached as "Hygieniker" to the 19th Army Corps, explains the excellent general condition of the troops under his own more immediate observation as due in great part to their supplies of French red wine. A solemn explanation of how these immense stores came into their hands—"the inhabitants had fled owing to fear of well-merited punishment"—is followed by an equally serious appreciation of the great self-restraint of his soldiers in so rarely "exceeding the bounds of decency." Their good health, their resistance to the petty hygienic troubles of the trenches, the favourable evolution of intestinal catarrhs, &c., are all attributed to the same cause. "Ah! le bon vin rouge de France!" says the French editor by way of comment. There have been many articles dealing with venereal disease in the German medical journals. In the *Deutsche Medizinische Wochenschrift* of Jan. 14th Professor Neisser, of Breslau, says that the figures of 70·6 per 1000 cases treated in hospitals during the Franco-German war of 1870, as representing the proportion of venereal cases, have already been largely exceeded in the present war. After remarking that an appeal to the honour of the heroes of Louvain and Flanders would be sure to have a deterrent effect (Man könnte aber gewiss mit Grösserem Erfolg an das Ehrgefühl unserer Truppen appellieren), he nevertheless makes the following proposals to deal with the situation: (1) imprisonment of all prostitutes that can be discovered; (2) energetic prophylactic treatment with salvarsan and mercury of all women "suspected" (*sic*) of prostitution; (3) the distribution of suitable protective appliances to the armies of occupation. Anyone conversant with French journalistic levities can imagine for himself the chance thus afforded for an expression of caustic humour. Neisser's proposals have been followed by numerous criticisms and counter-suggestions in the columns of the same journal. Dr. Kurt Mendel (of the *Neurologisches Centralblatt*) can find no remedy for the extremely widespread infection but absolute continence. Others make proposals for the regulation of this traffic which are on a par with their methodical and well-organised arrangements for the distribution of bread tickets. At a "Kriegsärztlicher Abend" held at Lille on Jan. 20th (*Münchener Medizinische Wochenschrift*, Feb. 9th), and attended by some 200 military medical men, it was proposed to distribute appliances to the troops by means of automatic machines. Complaints were also made of the behaviour of the women in the Germans' hands; and here a passage, in its nauseating frankness, may be given in the original: "Selbst die bessere französische Prostituierte halt sich den Deutschen fern: es kommen fast nur die niedersten und schmutzigsten Prostituierten in Betracht, die man sich denken kann. Sie sind eine gefährliche Infectionsquelle, weil sie alle Reinlichkeitmassnahmen, die die bessere Prostituierte durchfürt, missachten. *Daneben gibt es Frauen, selbst mit 4 und 5 Kindern und Mädchen, die sich aus reiner Not, um ein halbes Stück Brot den Soldaten anbieten.* Diese Neulinge der Prostitution sind besonders gefährlich, weil sie die Hauptträger der Infectionsquelle werden." As the French editor truly says, what human being can read without horror and disgust the unconscious revelation of a world of infamy contained in these lines?

THE ETIOLOGY OF RICKETS.

IT is somewhat remarkable that in a disease so widely spread and so common as rickets there should still remain so much that is enigmatic, or, at any rate, controversial in its etiology, in spite of careful clinical and experimental research in this and other countries. The whole subject of the etiology of this condition is reviewed in an interesting and critical manner in a paper by Dr. Leonard Findlay, which we publish in this week's issue of THE LANCET. He points out that in this country and in America, following the interesting observations of Sir John Bland-Sutton at the Zoological Society's Gardens some years ago, the dietetic factor in the etiology has received a great deal of attention. It is natural, since this disease can apparently be induced in some animals under experimental conditions, that considerable importance should attach to such observations; but Dr. Findlay rightly points out that it is essential that the truly rachitic character of the lesions induced in animals should be established by microscopical examination. Moreover, he points out further that there is a metabolic disturbance in rickets in the human subject, notably in regard to calcium salts, an important fact which is often lost sight of. It would appear that there is an inability on the part of the body to use this substance, even though present in the diet in sufficient amounts. The theory that this depends upon some hormonic defect is a tempting one, but is not at present definitely established. It has long been recognised that there is probably a hygienic factor in the causation of rickets, since the disease is so much more common in towns and in the older countries than in the country and in newer settlements. Dr. Findlay, on the basis of some experimental observations previously published, arrived at the startling and heterodox conclusion that there was no evidence that deficiency of fat, or, indeed, any error of diet, was a factor in the etiology of rickets. He found that the important factor in animals was the deprivation of exercise. He now supplements his observations in this respect by an interesting examination of the dietetic and hygienic conditions of between 400 and 500 rachitic children. He shows charts demonstrating that neither the want of breast-milk nor prolonged suckling exerts any definite influence on the incidence of rickets among the cases examined—an interesting refutation of the suggestion that dietetic factors are of paramount importance or that artificial or patent foods are causal agents. Some observations upon the occurrence of intestinal disturbances prior to the onset of the disease do not appear to lend support to Marfan's view that an intestinal auto-intoxication is the cause of the condition. An analysis of the cases according to the level of their homes above the ground revealed no important fact. A study of the amount of air-space allowed in the home to each child demonstrates that the less air-space the greater the incidence of the disease. Lastly, the amount of time spent in the open air is studied in regard to these children and reveals the interesting fact that a considerable proportion of these children are not taken out at all. Dr. Findlay believes that the two factors, confinement and deficient fresh air, render the child lethargic and diminish the amount of muscular exercise obtained, and further suggests that deficient exercise affects the metabolism of calcium, a thesis for which there is some experimental support. On the basis of his observations he advises massage, passive movement, and electricity in the treatment of the disease. We commend his paper to our readers as a thoughtful and suggestive piece of work.

THE PATHOLOGY OF LEPROSY.

THOUGH many points in the pathology of leprosy remain unsolved, it cannot be denied that the experimental investigations carried out during the last few years have thrown considerable light upon this difficult subject. In the current number of the *Annals of Tropical Medicine and Parasitology*, Vol. IX., No. 1, a very interesting and timely summary of the present state of our knowledge of leprosy, and the results obtained concerning it by experimental studies, has been contributed by Dr. H. Bayon, research bacteriologist to the Government of the Union of South Africa. The author has discussed the whole question of the clinical and pathological features of the disease, its specific organism, the experimental transmission of the infection to animals, and the relation of spontaneous rat-leprosy to the human disease. He has also dealt with serological tests and reactions in leprosy, and the degree of communicability of the infection. He has something also to say concerning the treatment and prophylaxis of the malady. It is gratifying to find that Dr. Bayon views hopefully the prospect of the ultimate extinction in time of this terrible disease. As regards its communicability, he believes that the evidence which has been accumulated justifies the conclusion that the usual mode of infection is by direct or indirect contact, especially under unfavourable hygienic circumstances, including overcrowding and lack of personal and domestic cleanliness. Intimate contact, such as that between mother and child, or sleeping in the same bed with a leprous person, supplies the requisite conditions for the transference of the disease. In countries like South Africa, where leprosy is not uncommon and where native servants or nurses are employed to wait upon white children, the danger is greater than some authorities have been inclined to admit. It is pointed out that the disease may exist in a native servant for a long time before its presence is recognised by the employer. Instances are mentioned where infection is believed to have followed upon the common use of drinking-cups or other vessels. Although Dr. Bayon regards as "far-fetched" the suggestion that a biting insect may act as the intermediary in the transmission of leprosy, he nevertheless admits the possibility that the common house-fly may suck up germs of the disease from leprous sores and transfer them mechanically to a healthy human subject. In this connexion those who have travelled in the East cannot fail to have been struck with the frequency with which flies swarm upon the open sores and round the nostrils of leprous beggars. With respect to spontaneous rat-leprosy, it presents numerous points of resemblance to the human malady, and the experiments which have already been made suggest that it may be etiologically related to that form of the disease from which man suffers, the relationship being possibly of a similar kind to that which exists between bovine and human tuberculosis. As regards treatment, Dr. Bayon reminds his readers that the macular variety of leprosy is subject to spontaneous remissions and apparent cures without the aid of any remedies. Chaulmoogra oil seems to be indicated for the nodular form of the disease, and as far as present experience goes, cultural extract may be usefully employed for the macular cases. With respect to prophylaxis, the measures recommended include registration and sanitary inspection of the homes of lepers, but segregation of the sufferers in asylums, settlements, or colonies is strongly urged; early separation of children from their leprous parents is necessary, and the strict enforcement of personal and domestic cleanliness, along with the abolition of overcrowding, must be carried out in localities where leprosy is known to be endemic.

INVALID CHILDREN'S AID ASSOCIATION.

THE Invalid Children's Aid Association held its twenty-seventh annual meeting on April 28th, Field-Marshal Lord Grenfell presiding. Three resolutions were submitted to the audience. The first, proposed by the chairman, was in favour of the approval and adoption of the annual report, and as Lord Grenfell pointed out, this report showed the excellence of the work done by the association, and the steady spread of its activity. The association now has 20 branches at work in London, and nearly 40 more provincial branches, most of them federated to the London Association. As evidence of the activity of the London branches, Lord Grenfell quoted the fact that in 1914 over 8000 invalid children were assisted by convalescence, surgical instruments, or whatever particular form of medical or surgical aid their medical attendants had ordered; while the sum of over £15,500 was expended in giving this aid. A second resolution, pledging financial support to the association, was proposed by Countess Ferrers, who spoke eloquently of the assistance so freely given by the association. A third resolution recommending the re-election of the association's council and executive committee was proposed by Lady Jellicoe, who instanced the number of former Invalid Children's Aid Association "cases" now serving their country at the front or on the waves as conclusive evidence of the excellent work it does. It had been hoped that Captain Francis Grenfell, V.C., would have been able to be present at the meeting and to speak. This was impossible, as he was actually serving at the front; but his letter expressing his regret at being unable to be present, written from the trenches near Ypres, was read out, and made a most moving appeal to its hearers. Year by year the work of the association increases, and year by year the difficulty of collecting the funds grows; but the association is favourably known to so many medical men that the public ought to feel sure that the money given does good medical service.

ASPERGILLOSIS OF THE NASAL ACCESSORY SINUSES.

Mr. Herbert Tilley has published in the *Journal of Laryngology, Rhinology, and Otology* for April five cases of aspergillosis of the maxillary antrum. The rarity of the condition is intimated from the fact that there can be found no mention of it in the literature of rhinology; it is suggested, however, that this condition may have been overlooked. Myxomatous disease is most likely to be confused with it. The mode of infection with the aspergillus mycelium is not known; it may be grafted upon a chronic inflammatory infection of the antral mucous membrane. Marked nasal obstruction is a prominent feature, and this is associated with sneezing and the discharge of a mucoid or slightly muco-purulent fluid. There may be neuralgic pains in the cheek and face. Especially important for diagnostic purposes is the occasional expulsion of small masses of a whitish-grey, semi-translucent, viscous material. In no instance is the discharge so free as to suggest an ordinary, chronic empyema. On examination the most striking feature in the cases seen was the pale, swollen, and œdematous condition of the nasal mucous membrane; and, further, this was not overcome by the application of 20 per cent. solution of cocaine. In no other disease, says the writer, is the lack of response to cocaine so marked. Transillumination revealed opacity in both infra-orbital regions. It was impossible, also, to get any return of fluid on irrigation. These points are all suggestive of this condition and diagnosis is assured, of course, with the discovery of the mycelium. This, however, is often a matter of some difficulty. In the instances here recorded Professor S. G. Shattock had undertaken the examination. In the mucin examined there pervades a well-developed mycelium, the coarseness of whose filaments at once excludes actinomycosis. There are, of course, also collections of bacteria which are, however, much less widely distributed than would be expected. The mucin is probably secreted under irritation and is subsequently inspissated and the contained cells are polymorphonuclear leucocytes. It is curious to note, finally, the presence of crystals resembling the Charcot-Leyden crystals found in asthmatic sputum.

WE regret to announce the death of Sir William Richard Gowers, M.D. Lond., F.R.C.P. Lond., LL.D., F.R.S., which took place on May 4th at his residence, 34, Ladbroke-square, W.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

ANNUAL CONGRESS.

(*Concluded from p. 930.*)

AT the annual congress of the Ophthalmological Society of the United Kingdom two set discussions were arranged. The first, upon Ophthalmic Injuries in Warfare, introduced by Mr. W. H. H. Jessop, was reported last week. The second, on Detachment of the Retina, was introduced by Mr. M. S. Mayou.

Detachment of the Retina.

Mr. MAYOU, in introducing the set discussion on this subject, said that detachment of the retina was only a sequel to other intraocular diseases. He dealt in the first place with its associated physical phenomena, and secondly with congenital detachment especially. The condition was really one of separation of the retina between the pigment-cell layer and the rods and cones—i.e., where the two layers of the optic cup come together during fœtal life, and which was subsequently represented as a lymph space. Detachment of retina was essentially a cystic condition. He was strongly in agreement with von Graefe's view that it was exudative in origin, and that detachment could not occur without fluid being effused from the choroidal vessels, the fluid having a higher specific gravity than that in the vitreous chamber. It was probable that there was no true tissue adhesion between the rods and cones and pigment-cell layer, or at least so slight that it was not a factor in keeping the retina in its place. This potential space was filled with lymph, permitting the rapid tissue change associated with the bleaching and regeneration of the visual purple. In the normal eye distension of the vitreous in its hyaloid was by fluid derived from the ciliary process; the vitreous exerted a pressure by having a higher density than the lymph in the inter-retinal space. In many diseases the vitreous became more fluid than normal, or the framework of the vitreous shrank with the hyaloid, and there was free fluid in the space between hyaloid and retina. With degeneration of the vitreous the densities of the fluids on the two sides of the membrane closely approximated, and a slightly increased density of that in the inter-retinal space would produce detachment. For the investigation of such cases it was necessary to use a fixing agent which coagulated but did not destroy albumin, and boiling was the best. It was very difficult to ascertain the underlying cause of shrinkage of vitreous. Detachment of retina occurred when a larger pressure was exerted outside than inside the membrane. Detachment could occur with a normal vitreous, as when the choroid was the seat of a growth. Owing to the effusion of albuminous fluid the retina was pushed inwards, and some of the fluid was squeezed out of the connective tissue meshes, passing forward into the anterior chamber. Glaucoma might supervene before the complete shrinkage of the vitreous. Detached retina associated with growth in the choroid was exudative in character, though it might cause secondary changes in the vitreous. He detailed some cases in children who had come under his care. In myopia a fluid exuded into the inter-retinal space of low density would cause detachment, possibly associated with venous obstruction. Inflammatory exudation from the choroid might cause detachment if of serous rather than plastic nature. Injuries might cause detachment, either with or without perforation of the globe. Fibrous bands in the vitreous, he thought, rarely caused detachment by contraction, though they might predispose to it by causing shrinkage and fluidity of vitreous. Cysts in the retina in its normal position might be of considerable size and, by bulging, cause detachment on either side. Some of the cures of detachment, he thought, were probably due to evacuation of the fluid contents of these cysts. Congenital detachment was not usually recognised, as it occurred in microphthalmic eyes, and was not then seen clinically. Summarised, his contention was that the essential feature in congenital separation between the layers of the retina was distension of the primary optic vesicle with fluid, and that the fibrosis of the vitreous was of secondary development, not the cause of failure of union between the inner and outer layer.

Mr. Leslie Paton pointed out that so long as the pathology of any disease was obscure its treatment must be empirical and frequently ineffectual. This was the present-day attitude in regard to detachment of retina, which was really a terminal effect. In cases of tumour of choroid detachment was caused by accumulation of œdematous fluid behind the retina, this fluid being an irritative product. In some cases the cause was a perforating wound of the sclera, a case of which he quoted. Sometimes the detachment was due to a rapid exudation of lymph and serum into the sub-retinal space in severe choroiditis or general uveitis; or it might be caused by subretinal hæmorrhage. He believed that detachment might occur from cicatricial contraction of the retina itself. From an examination of different types he thought it safe to conclude that symptomatic detachment might arise from either a push from behind, a pull from inside, contraction of the retina, or a combination of any of these factors. He reminded the meeting of the main contentions of Raehlmann and Leber, and said that most cases of simple detachment occurred in myopes; he had found it to occur in all degrees of myopia, in which condition there was an increased cubical capacity of the scleral cavity. Vail, of Cincinnati, had shown that in myopes the circular ciliary muscle was usually atrophied from non-use, and that authority considered it part of a generalised atrophy of the ciliary body, with diminution of aqueous secretion and lowering of ocular tension. Mr. Paton then proceeded to discuss the question of sympathetic detachment, stating that he considered it a moot point as to whether it was really sympathetic, or whether the action was a setting up of a chronic cyclitis or uveitis in the sympathising eye. He had had some cases of cure—i.e., restoration of function; and he realised that spontaneous cure sometimes eventuated, though similar cases left alone had not got well, as had the cases in point after his treatment. In every case he thought all the facts should be placed before the patient, so that he could decide on whether he would have anything done or not, especially as knowledge on the subject was not yet complete enough to enable a safe prognostication to be made in any particular instance.

Dr. A. Maitland Ramsay, reviewed the literary landmarks. He agreed with Mr. Paton that no theory of causation of detachment sufficed to account for all the cases; the underlying cause in all was disease of the uveal tract and of the pigment epithelium, though this might be nothing more than senile degeneration. The presence of a collection of fluid between the choroid and retina led to many forms of evacuation, which were briefly indicated—38 in number. The most important factor in the treatment he considered to be absolute rest in bed; patients often volunteered the statement that they could see best in the morning after a good night's rest, but that sight failed as the day advanced. The rest period should not be less than four to six weeks. Relapses occurred most frequently in those who had rested but a short time. Every effort should also be made to improve the patient's well-being, particular attention being bestowed on procuring regular action of the bowels, kidneys, and skin. Next the pressure bandage was important; both eyes should be covered and the pressure must be quite appreciable, though stopping short of pain. But where the bandage caused pain, and on its removal the eye was red and irritable, it should be discontinued, owing to the possibility of irido-cyclitis supervening. Cases which did not bear the pressure bandage he regarded as of unfavourable prognosis. The third important factor of treatment was subconjunctival injections after 48 hours of bandaging, but only if the electric ophthalmoscope showed that the site and character of the detachment appeared favourable. The pain following the injections (which he detailed) was mitigated greatly by using chemically pure chloride of sodium. Diaphoresis he did not employ until a fortnight's trial by his other methods showed little or no improvement. In some cases diaphoresis started an improvement which became slowly progressive. He used pilocarpine for this. There should be a period of leisurely recuperation afterwards; resumption of businesss immediately after cure seemed to invite relapse, and this was also helped by constipation. Failure was almost certain when the choroid was extensively diseased, when the pupils were sluggish in responding to mydriatics, and when intraocular tension was greatly reduced.

The debate was continued by Sir Anderson Critchett, Mr. E. Treacher Collins, Mr. R. R. Cruise, Mr. J. B. Lawford, Mr. Sydney Stephenson, Mr. D. Leighton Davies, Mr. P. W. Maxwell, Mr. J. B. Story (Dublin), Mr. C. Higgens, Mr. G. Mackay (Edinburgh), and the President and the authors replied.

Mr. Cyril Walker read a communication on

Angiosarcoma of Retina.

The patient, aged 4 years, was seen on Nov. 11th, 1914. Eight months before there was said to have been a film over the right eye; no pain or redness. It disappeared in about six weeks. In June and September there was some pain in the eye, but the boy had regularly attended school to the end of October. The right eye was seen to be the seat of a brownish-yellow hypopyon. There was no ophthalmoscopic reflex; the tension was normal, and the pupil dilated well with atropine. There was doubtful perception of light. The left eye was normal, and the patient's general condition good. Ten days later the eye became red and tender and there was some continuous pain; the tension was *plus* 1. The contents of the anterior chamber were evacuated, and Professor Walker Hall reported that the material was probably sarcomatous. The eye was accordingly excised and submitted to the same authority. Early in December some three-quarter inch of the stump of the optic nerve was removed, with a mass of tissues surrounding it. Pathological examination showed that recurrence had commenced in the stump of the nerve and the surrounding tissues, but there was a small margin of healthy tissue. Mr. A. Osborne, of Ilfracombe, reported that recurrence took place within a fortnight of the second operation, and that the mass had attained the size of a cocoanut. The boy's mental condition was not affected, and there had been no metastasis. The specimen showed that the ciliary region was not invaded.

Clinical Meeting.

At the clinical meeting at the Royal London Ophthalmic Hospital the following cases were shown:—

Mr. J. Gray Clegg (Manchester): Case of Bullous Keratitis, whose sister was similarly affected.

Mr. Sydney Stephenson: (1) A case and drawing to illustrate Coarse Striate Clearing of a Corneal Cicatrix; and (2) a case of Blue Sclerotics.

Mr. C. Wray: (1) Cases operated on for Conical Cornea; (2) drawings of Cured Conus; and (3) Exostosis of the Orbit (two cases).

Mr. E. Treacher Collins: (1) Case of Congenital Ectropion of both Lower Lids; (2) Double Facial Paralysis; (3) Detached Retina cured by rest in bed and scleral puncture; and (4) Aphakia with apparent accommodation.

Mr. Leslie Paton: Cases of Healed Detachment of Retina.

Mr. W. T. Holmes Spicer: Congenital Cataract and Spontaneous Dislocation of Lens in three members of the same family.

Mr. J. Attlee: Peripapular Ectasia.

Mr. Rayner Batten: Collapsible Periscope.

Mr. W. H. H. Jessop: Acute Central Retinitis.

Mr. G. H. Pooley (Sheffield): Extensive Pigmented Moles of Face, Eyelids, and Conjunctiva.

Mr. R. Foster Moore: (1) Two instances of Disappearance of a Detachment of the Retina in Patients with Albuminuria; and (2) Pigmented Mole of rapid growth.

Mr. Cyril H. Walker (Bristol): Hyaline Bodies at the Optic Disc.

Mr. A. C. Hudson: Iridescent Corneal Scar.

The President (Mr. F. Richardson Cross) read a paper on

Eye Symptoms in Kaposi's Disease (Xeroderma Pigmentosum).

In a general review of the disease he stated that spots like freckles appeared in the first year or two of life, and were often precursors of the grave skin disease described by Kaposi in 1870, accompanied by dryness and atrophy of the skin, and other serious changes. Frequently more than one member of a family were affected. The prognosis was very gloomy; early death might occur from deep ulceration towards the brain or other vital parts; or from exhaustion or hæmorrhage. The muco-cutaneous surfaces, such as the eyelids, became thinned, shrunken, and fissured with superficial ulcers ; and the eyeball might participate in any phase of the disease, and warts might occur on the lid edges. The ocular conjunctiva was usually hyperæmic. Some cases showed pterygium, and the cornea became hazy from infiltration of its substance or from swelling of the epithelium. Ectropion was frequently present, leading to opacity or ulcer of cornea. But in many cases the eyes were open and light was well tolerated. The optic nerve and intraocular structures were affected only late, if at all. Massage of the eyeball, especially by the use of calomel ointment, served to empty the superficial blood-vessels. Dr. A. Whitfield had much improved one such case by applying X rays. During the past year Mr. Cross had had under observation two cases of Kaposi's disease, brother and sister, aged 11 and 9½ years. The parents (cousins) were healthy. The boy was born in Ceylon, and when coming to England at nine months old he became very sunburnt in the Red Sea, his skin becoming scarlet. Later the face, neck, and shoulders were dotted with yellowish-brown pigment spots, and the skin became thin and shrunken. The girl was born in England and arrived at Ceylon when a few months old ; in her voyage she did not encounter excessive sun-glare. At nine months of age her skin also became bad, and a little later a small nodule appeared on the cheek but fell off, leaving no scar. She had implication of the eyelids, causing eversion. When four years old the boy had a troublesome papule on the eye, for which he was treated by Sir John Tweedy, who reported that he first saw the patient in April, 1907, when he was under the care of the late Dr. Radcliffe Crocker for the skin condition. At that date there was subconjunctival ecchymosis at the outer side, and at the inner side of the globe, between the cornea and the caruncle, a truncated conical swelling with some ecchymosis and conjunctivitis. There was so much photophobia that a satisfactory view could not be obtained. On the following day, under a general anæsthetic, he examined the eye and found an indolent swelling in the conjunctiva and episclera at the inner side of the globe. He scraped it with a sharp spoon and applied powdered salicylic acid, and ordered the eye to be washed two or three times a day with a solution of salicylate of soda. The eye gradually improved until the seat of the swelling presented the appearance of a small phlycten. Eighteen months later, when Sir John Tweedy next saw the case, the eyes were much stronger and were rarely inflamed. Two and a quarter years later the patient saw J. 2 with correcting glasses. When Mr. Cross saw the boy 12 months ago he had much photophobia, both winter and summer, and when in the light he was constantly sneezing. He found it difficult to read. Under chloroform there was found to be a dull hyperæmia of the eyeballs and two small phlyctenular swellings. The corneæ were somewhat glassy ; the pupils were small, but reacted to light and opened freely to homatropine. A few days later he saw 6/18 for a moment and J. 6. Improvement was reported after massage of the eye with calomel ointment. In November there was acute inflammation of the right eye and a fine infiltration running across the cornea. There was also a haziness of the left cornea, and a marginal spot looking like pterygium.

Mr. R. AFFLECK GREEVES showed microphotographs of sections through the conjunctival growth removed from the eye of the boy. The growth consisted almost entirely of epithelial cells, mainly prickle cells, and showed evidence of commencing malignancy.

Mr. AFFLECK GREEVES read a paper on

The Microscopical Anatomy of Syphilis of the Eye,

illustrated by microphotographs of sections taken from three cases. In the first case, one of old interstitial keratitis, he pointed to the presence of persistent though empty endothelial channels in the cornea, the remains of former blood-vessels. The second case was one of gumma of the iris, the structure of which was peculiar in that the pigment epithelium had proliferated into the inflammatory tumour and given clinically a pigmented appearance, causing to be made the erroneous diagnosis of melanosarcoma. The third case illustrated the pathological appearances of syphilitic scleritis and of a proliferative form of choroidoretinitis characterised by the presence of dense tissue between choroid and retina. This tissue, he considered, was probably produced by the proliferation of the retinal pigment epithelium.

Mr. GREEVES also read a paper by Mr. G. KOMOTO on

The Pathological Anatomy of the Retina and Choroid after the Complete and Partial Cutting-off of their Respective Blood-supplies.

It was based upon the pathological examination of an eye which was excised ten days subsequent to the cutting-off of the retinal and posterior choroidal blood-supplies by the removal of a lymphangioma from the posterior part of the orbit, along with a portion of the optic nerve. While the retina was completely necrotic posteriorly, all its layers were well preserved anteriorly. It was argued from this that the whole of the anterior part of the retina is probably almost entirely dependent on the choroidal circulation. The chromatophores of the choroid and the pigment epithelium of the retina showed peculiar changes in form, caused by their being deprived of normal blood-supply. The paper was illustrated by microphotographs.

Mr. TREACHER COLLINS read a communication on

Apparent Accommodation with Aphakia.

The case was described of a boy who had lamellar cataracts removed from his eyes when 7 years old by repeated discission operations. When he was 14 it was discovered that he was using only one pair of glasses for both distance and reading. On testing his sight it was found that he saw right with + 13, 6/6 ; left with + 13, 6/9 ; and with the same glasses in the same position on his nose, looking straight through the centre of them, he read J. 1 fluently. Any alteration in curvature of the cornea while he adapted his eye for the near point was excluded by examination with the ophthalmometer, and by the use of Batten's eyebath. Any lengthening of the antero-posterior axis of the globe was watched for by ophthalmoscopic examination. He could see just the same when the eyelids were held away from contact with the globe. When the pupils were semi-dilated with cocaine he could still read J. 1 with + 13 in ordinary daylight with the right, but only J. 2 with the left. When the pupils were fully dilated with atropine he could only read J. 10 with + 13 in ordinary daylight, but in the dark room with a strong light concentrated on the test-type he still read J. 1 better with the right eye than with the left. When examined with the pupils well dilated it was seen that in the right eye there was a membrane with a sharply defined central circular aperture in it, 3·5 mm. in diameter. In the left eye the aperture was larger and more oval in shape ; the membrane in it, moreover, did not occupy the entire pupillary area, a space being left at the circumference between it and the pupillary margin. Both pupils were regular, free from any adhesions, and acted very briskly to light. Mr. Treacher Collins considered that the evidence he had collected in connexion with this case went to show that there was not any true accommodation ; that the boy's power of seeing clearly at different distances was due to the cutting off of circles of diffusion, partly by the contraction of the pupils, but mainly by the small central openings in the membranes. He quoted several other cases which had been recorded, in which apparent accommodation was present after the removal of the lens, and advocated trying to adopt the technique in operations for soft cataract so as to produce a condition similar to that in the case here described.

Mr. TREACHER COLLINS described a case in which an

Epibulbar Epithelioma Completely Disappeared after the Application of Radium Bromide.

A man, aged 80, had a new growth about 10 mm. in diameter at the limbus in his left eye. It had formed in two years, and was gradually increasing in size. A small piece was cut off, and microscopical examination of it showed it to be an epithelial growth, which was extending into and infiltrating the episcleral areolar tissue. At the Radium Institute the patient had 10 mg. of radium bromide on a circular disc 1 cm. in diameter, unscreened ; it was held continuously over the growth for 50 minutes by a relay of assistants. After this the growth gradually disappeared. At the end of a fortnight only a thickening at the margins was left. It was now five months since the treatment, and all that could now be seen at the site was a smooth greyish scar. The way in which epibulbar epitheliomatous growths permeate the lymphatic channels and spaces in and about the eye was then demonstrated by a series of lantern slides. It was shown how, for a long time, the sclerotic resisted such permeation and the growths remained superficial, and while this stage lasted they would be eminently amenable to treatment by radium.

Dystrophies of Cornea and Glaucoma.—Primary Pneumococcal Choroiditis.—Artificial Maturation of Cataract.—Sarcoma of Socket.

Mr. GRAY CLEGG read four communications. The first was on Dystrophies of the Cornea and Glaucoma, with especial reference to a familial variety of the former. Changes in the cornea occurred which resembled those found in glaucoma, but there was no tension element. Two sisters in a family of three were shown, all affected by the disease, which probably existed in at least one other relative. Another case was related in which similar changes were present; but as there was a doubtful tension element iridectomy had been done in one eye and trephining in the other without any beneficial effect on the corneæ.

The second paper was on Primary Pneumococcal Acute Choroiditis. The disease occurred in a healthy male aged 27. It affected the right eye, which had been previously examined and found healthy. At first the appearances were considered by three oculists to be those of tubercle, consisting of two blurry yellowish-white foci at the macula. In spite of treatment an acute panophthalmitis developed, and 29 days after being first seen a Mules's operation was performed. A specimen taken at the operation showed a pure culture of the pneumococcus of Friedländer.

The third paper was on a method of Artificial Maturation of Cataract allowing of early extraction. The method was, briefly, as follows. The night prior to operation the pupil was well dilated with atropine, and paracentesis was performed with an iris knife. Massage was applied directly to the lens capsule by a smooth iris repositor, and this was followed by indirect massage by the back of a lens scoop. Atropine was again instilled. If no irritation resulted no more atropine was used after the day of operation. Often within a week the eye was perfectly quiet, the pupil returned to its ordinary size, and regained its activity. Extraction could then be resorted to, either without or with iridectomy. In this way the whole process could in many cases be gone through in three weeks to recovery.

The last paper described a case of Sarcoma of the Socket. The patient had already had his left eye removed and was wearing an artificial eye. About August, 1910, it would not keep in position owing to the presence of a pediculated growth towards the outer part of the socket. The mass was excised, but in November, 1910, it recurred. A section of the original growth raised suspicions of malignancy, and a few days later the lid margin with the conjunctiva and the whole contents of the orbit were removed. The structure, as described by Professor Walker Hall, was suggestive of perithelioma. Possibly the tumour was caused by a fine crack in the artificial eye which he had been wearing.

Mr. W. B. INGLIS POLLOCK (Glasgow) read a paper on

Dissolving Senile Cataract in the Early Stages.

In a consecutive series of 100 patients with senile cataract who were under treatment for not less than three months with alkaline lotions and dionine, fibrolysin, and iodolysin drops, 45 per cent. of the 178 eyes showed great improvement and 41 per cent. an improvement in vision; 7 per cent. remained stationary. In 8 per cent. the treatment failed to arrest the progress of the cataract. The method did not cause pain and could be persevered with over long periods. Attention should be directed to the general health, and the internal administration of an alkali was an advantage. Several patients had, he said, remained free of recurrence for a period of from three to six years.

Lieutenant-Colonel H. HERBERT, I.M.S., read a communication on

The Capsular Opacities of Morgagnian Cataract.

He showed photomicrographs of the capsule of a very long-standing cataractous lens which had passed beyond the Morgagnian stage. The capsule showed scattered white dots clinically. Under the microscope these were found to consist of spaces formed between layers of thickened capsule, and containing mainly lens débris similar to the "milk" of the cataractous lens. Reasons were given for supposing that similar changes may account for the globules or clear rings of after-cataract. And reference was made to two processes at work, singly or together, in senile cataract. The one, representing simply deficient nutrition, resulted eventually in an abnormally dry, shrunken lens. The other, apparently due largely to destruction of the lens cells lining the capsule, consisted essentially in undue admission of aqueous into the lens, and its results.

Hyperplasia with Colloid and Amyloid Degeneration of the Episcleral and Circumdural Fibrous Tissues.

Mr. GEORGE COATS recorded a case of conjunctival and orbital growth which commenced in a man aged 25 and progressed slowly during a period of observation of 17 years. Waxy, semitranslucent, nodular masses occupied the bulbar conjunctiva and overlapped the cornea. The patient's health remained unimpaired throughout. Pathologically the condition was essentially a proliferation of the deep episcleral and circumdural fibrous tissues, with a homogeneous form of degeneration which, in its more advanced manifestations, gave the staining reaction typical of amyloid disease. The vessels were similarly affected, and giant cells, lymphocytal infiltration, calcification, and ossification were present. The histology of the case was typically that of "amyloid disease of the conjunctiva," a purely local condition not associated with tubercle, syphilis, &c. The unique feature of the present case was the simultaneous involvement of the orbital tissues.

THE NATIONAL INSURANCE ACT.

The Reduction of Capitation Fees.

THE London Panel Committee, at its recent monthly meeting, gave consideration to the question of the reduction of capitation fees from 1*s.* 9*d.* to 1*s.* per quarter and decided to refuse concurrence with the proposal of the London Insurance Committee to that effect. The London Panel Committee, representing, as it does, those practitioners in the metropolitan area most intimately concerned in the matter with which it was dealing, is not likely to lack support from its constituents. It will also find sympathy accorded to it by other bodies and by individual practitioners elsewhere, who are equally concerned with the unavoidable reduction of the incomes of panel practitioners as the result of the enlistment of insured persons on their lists. At a meeting of Glasgow panel practitioners specially convened to consider the forming of a local branch of the Panel Medico-Political Union, Dr. A. Salter made special reference to what was taking place with regard to fees in London, and submitted to the meeting that precisely the same conditions would be found before long applying to medical men in Scotland. His observations on this topic and the expression of his views with regard to the policy of the Insurance Commissioners were received by his hearers with a cordiality which left no doubt as to the depth of the feeling of anxiety, not unmixed with resentment, provoked by the situation.

To return to what took place at the meeting of the London Panel Committee, the position taken up by those who discussed the resolution and substituted for it an amendment which defined that position more clearly, can hardly be treated by anyone as unreasonable, although, no doubt, the London Insurance Committee, at any rate, might, in existing circumstances, find it difficult to comply with the suggestion thus submitted to it. The recommendation made by the Panel Service Subcommittee was—

> That the Panel Committee do not concur in the proposal of the Insurance Committee to make to each practitioner on the panel during the second quarter of the medical year 1915 two payments in advance of the amount due to him, at the rate of 6*d.* for each capitation fee of 1*s.* 9*d.* credited to him in accordance with the Medical Benefit Regulations, 1913, and that the Insurance Committee be so informed.

The amendment referred to, which was moved by Dr. M. Bernstein in words suggested by the chairman, Dr. H. J. Cardale, was—

> That all words after "that" in the recommendation be deleted and the following substituted: The Panel Committee recognises that a reduction in the Medical Benefit Fund on account of insured persons who have enlisted is inevitable, and accepts it, but it does not agree to a general reduction being made from the lists of all practitioners alike, but considers that the reduction should be made strictly in accordance with the numbers removed from each list.

That reduction in the numbers of patients credited to each practitioner should follow upon the enlistment of a proportion of those patients, many of whom might never return, was inevitable. To lose income in respect of "removal" thus brought about would rank as a necessary hardship inflicted by the war, corresponding to the hardship in the form of loss of earnings endured by many of the medical man's fellow citizens. To lose income and to have the loss assessed arbitrarily and without reference to the question whether the work performed among insured patients is correspondingly diminished, stands upon quite another footing. A medical man in one district might witness the departure of 20 per cent. of his patients, and as they would be the healthiest and those giving him least trouble he would see them go with regret. He would not, however, have the same sense of injustice as would a brother practitioner deprived of 20 per cent. of his income in a district where the percentage of recruiting was very small, and in which, perhaps, on account of the presence of manufactories supplying munitions of war, the pressure of work was raising the percentage of illness among insured workers.

There is a further element in the matter also to which the attention of the London Panel Committee was called with some justice by Dr. Hogarth, who invited the Panel Committee to protest against the proposed reduction in so far as it was due to the failure of the London Insurance Committee to produce a correct register. Mr. R. J. Farman observed, in support of this point, that if the lists had been kept up to date the Insurance Committee would have been able to say at once the number of insured persons on each practitioner's list, and the number of men who had left to join the colours, thus arriving at the exact amount due to each medical man. It will be freely admitted that the amount of clerical work laid by the Insurance Acts upon the London Insurance Committee is very heavy, and that now, with the depletion of clerical staff through enlistment, its weight may be yet more heavily felt; but the criticism expressed above refers to arrears in the compilation of records and statistics which arose before the war, and medical men who themselves suffer severely if they allow the clerical work imposed upon them as members of the panel to get into arrears can hardly be expected to sympathise when the fact that the Insurance Committee has fallen behind in its office work is brought into prominence. They are rather inclined to argue that a committee should place itself or be placed by the legislature, by means with which they are not concerned, in a position to keep abreast of its routine duties, and they do not forget the difficulty and illwill which arose, markedly in London, but in other areas as well, out of delay in the allocation of patients, and the consequent creation of "unallotted funds."

Dr. Hogarth called attention also to another aspect of the case in protesting against any reduction being made at all as the result of enlistment. Medical men, he pointed out, undertook their work in normal times of peace; now they were asked to see themselves deprived temporarily of patients who were healthy and strong when the bargain for their treatment was struck, but of whom many would come back before long maimed and broken in health. They were left at present with an increased proportion of the worst of the insured, the best having gone. They were going to receive back a large number of the latter as ailing persons, and so to suffer severely as a body from the aftermath of war.

The position briefly summarised above is undoubtedly a difficult one for the medical practitioners upon the panel in London and in other areas as well. It is also by no means an easy one for the Insurance Committees, especially in the metropolis. To place the matter on a business footing, for such is the proposal of the London Panel Committee, and to pay each practitioner his agreed remuneration in respect of each patient whom he is liable to be called on to treat, would apparently in the present circumstances be a clerical operation of considerable magnitude. The urgency of the matter increases the difficulty and also the inevitable hardship to medical men, for the question has arisen over advances—that is to say, over the payment of instalments of income which is not, strictly speaking, due till the end of the year. The question was asked at the meeting of the London Panel Committee as to the position created by a refusal to agree to the proposed reduction, and the chairman frankly said that it would "hang the money up" of which the constituents of those present might be in urgent need. It is unfortunately too late now to point out that the capitation system adopted, after deliberation and discussion, in normal times of peace has not proved the best adapted for the emergency of war, and has produced a state of affairs which would not have arisen under a system of payment by fees for work done.

London Insurance Committee.

The report of the Medical Service Subcommittee laid before the London Insurance Committee at its last meeting showed that the subcommittee had only had before it in the period March 26th to April 16th seven complaints made against medical men by their patients, and that these did not even allege any serious ground of complaint. In three instances the case was met by the transfer of the patient to the list of another medical practitioner, the first medical man either asking for, or acquiescing in, the change. In another a charge of failing to provide adequate treatment was found not to have been substantiated. In two there had been irregularity in the matter of certificates of incapacity, and the medical man was recommended to be so informed, and in the seventh, the practitioner having been informed that he was not entitled to a fee which he had been paid, had returned it to the patient, and the matter was allowed to rest there. In this last instance the question was whether there had been a miscarriage on the part of the complainant, for which the medical man on the panel should have given his attendance as for an illness, or a birth, for which he would have been entitled to make a charge. The conditions necessary to constitute a confinement as contemplated by Clause 2 (1) of the practitioner's agreement are the issue of a living child, or labour after 28 weeks' pregnancy whether the issue be alive or dead. The complainant alleged four months' pregnancy and a miscarriage. The practitioner was of the opinion that his patient had been pregnant for six months and thought himself entitled to charge, but the subcommittee pointed out that he was wrong as to this upon his own showing, as there had not been the birth of a living child. In another case in which a medical man was concerned he was the complainant and secured the transfer of one of his patients to another practitioner's list.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

MEETING OF COMITIA.

A COMITIA was held on April 29th, Dr. FREDERICK TAYLOR, the President, being in the chair.

The following candidates having passed the required examination were admitted Members of the College:—Cyril Dudley Kely Corbett, M.D. Oxon., L.R.C.P., and Joseph Strickland Goodall, M.B. Lond.

Licences to practise physic were granted to 101 candidates who had passed the necessary examinations.

The following Members were elected Fellows of the College:—Archibald Donald, M.D. Edin. (Manchester); George Gavin Morrice, M.D. Cantab. (Weymouth); Thomas Beattie, M.D. Durh. (Newcastle-on-Tyne); Noel Dean Bardswell, M.D. Edin. (Midhurst, Sussex); Frank Cecil Eve, M.D. Cantab. (Hull); John Hay, M.D. Vict. (Liverpool); George William Watson, M.D. Lond. (Leeds); Reginald Charles Jewesbury, M.D. Oxon.; Edwin Greaves Fearnsides, M.D. Cantab.; Thomas Renton Elliott, M.D. Cantab.; and John George Adami, M.D. Cantab. (Montreal, Canada). Grafton Elliot Smith, M.D. Sydney, F.R.S. (Manchester), was also elected a Fellow of the College under By-law LXXI.

The President was re-elected a representative of the College on the Senate of the University of London.

Two communications were received from the Secretary of the Royal College of Surgeons of England, dated March 12th and April 9th, 1915, respectively, reporting proceedings of the Council of that College on March 8th and April 8th.

A report from the Committee of Management was received and adopted, dated March 8th, recommending that the University of Illinois be added to the list of foreign universities recognised by the Examining Board in England; another report, dated March 15th, was also received and adopted recommending that the following Portuguese Universities be added to the list: University of Coimbra, University of Lisbon, and University of Oporto.

Another report from the Committee of Management, dated April 21st, referred to a letter received from the Dean of St. Bartholomew's Hospital Medical School suggesting that during the war it might be possible to shorten the curriculum for medical students; and a letter had also been received from the Director-General of the Army Medical Service expressing the hope that the Royal Colleges would give the matter their most earnest consideration. The Committee of Management were of opinion that it was not desirable that the two important requirements of the regulations—(1) a minimum curriculum of 57 months, and (2) a minimum period of clinical study during two winter and two summer sessions after passing in anatomy and physiology—should be relaxed at the present time. The committee desired to point out, however, that under the regulations of the board they had power to grant exceptions to the regulations and that they had already exercised this power in cases where the two important principles above referred to had not been involved. They were prepared to antedate the commencement of the curriculum in cases where students had pursued medical or scientific study before passing the Preliminary Examination, or before entrance at a medical school, and they believed, from inquiries which had been made, that this procedure would enable the majority of the students referred to by the Dean in his letter to enter for the Final Examination three months earlier than would otherwise have been possible, and yet with a full curriculum of 57 months. The report was adopted.

After some further formal business the PRESIDENT dissolved the Comitia.

ASYLUM REPORTS.

Roxburgh, Berwick, and Selkirk District Board of Lunacy (*Annual Report for the Year ending May 15th, 1914*).—The total number of patients under treatment during the year was 398, the average daily number resident being 321·1. The patients admitted during the year numbered 71, and of these 15 had been previously under treatment in this asylum. Hereditary predisposition to mental disorder was ascertained to exist in 25 cases, and more than half of the cases suffered from some form or other of bodily disease for which medical treatment was required. In 18·3 per cent. of the total admissions the age was over 70 years. The discharges numbered 40, with a recovery rate of 33·8 per cent., calculated on the total number of admissions. The rate of mortality calculated on the average number resident was 7·6 per cent. Pulmonary tuberculosis was ascertained to be present in an active form in 20 per cent. of the deaths.

East Sussex County Asylum, Hellingly (*Annual Report for the Year ending March 31st, 1914*).—The total number of cases under treatment during the year 1913 was 1374, the average daily number resident being 1122. There were 228 direct admissions. With regard to these, the most noticeable features were the diminution in the number of those suffering from what may be called the more obvious forms of insanity—i.e., acute mania and acute melancholia, and the increase in the number of patients suffering from dementia præcox (primary dementia) and those forms of insanity due to toxic causes, such as confusional insanity, acute and chronic hallucinatory insanity; there was also an increase in the number of patients suffering from delusional insanity, more especially the paranoid form. It would appear that the prognosis so far as complete recovery is concerned is in many of these latter forms of insanity not very favourable, and, moreover, that the type of insanity in this district seems to be gradually changing. The discharges numbered 141, with a recovery rate on the direct admissions of 41·66 per cent. A considerable proportion of patients were sent out at first "on trial," and the After-Care Association has recently decided to assist these patients in the same way that they do those discharged "recovered." There were 102 deaths, making a rate of 9·09 per cent. on the average daily number resident. Tuberculosis was the cause of death in 10·7 per cent. of the total number. The causes of death were verified by post-mortem examination in 74 per cent. The number of post-mortem examinations has considerably decreased since the Commissioners expressed the opinion that before any examination is made the consent of the friends must be obtained after the death of the patient.

Govan District Asylum, Hawkhead, Paisley (*Annual Report for the Year ending May 14th, 1914*).—The total number of cases under treatment during the year was 956, the daily average number resident being 654·3. The total number of admissions was 309, of whom 261 were first admissions and 48 were readmissions. There were 176 patients discharged, with a recovery rate calculated on the total admissions of 27·5 per cent. This is a low recovery rate, but it is accounted for to a large extent by the fact that the Govan parish authorities have to take charge, in the first instance, of many patients who fall ill within their district, although they have not a settlement in the parish (deports from Canada and America included). Many of these are afterwards transferred to the asylums of their own districts before recovery has taken place. The deaths were at the rate of 19·1 per cent. of the average daily number resident. Among the factors found to be associated with the outbreak of the mental disorders there stand pre-eminent: (1) Physical debility and disease; and (2) alcoholic excess. Of the patients admitted, over 78 per cent. were in an unsatisfactory state of health. In a considerable proportion of cases the patients on admission were suffering from the terminal stages of bodily diseases, and this is reflected in a high death-rate and a low recovery rate. Alcoholic excess was present as the predominant causative agent in no less than 25·2 per cent. of the men and 7·6 per cent. of the women. As a rule, alcoholic excess was found to be associated with a reduced physical condition or actual bodily disease. In 28 per cent. of the male alcoholics, however, the general physical condition was fair, and no evidence or history of previous bodily disease was obtained. The figures given above relate exclusively to patients admitted for the first time. When this is considered in conjunction with the fact that a considerable proportion of individuals suffering from acute forms of alcoholic mental disorder (e.g., delirium tremens) are not now sent to the asylum, but are treated in the observation wards of the parish hospital, it can hardly be denied that excessive drinking habits are largely responsible for the prevalence of mental unsoundness in the community.

Stirling District Lunacy Board for the Counties of Stirling, Dumbarton, Linlithgow, and Clackmannan (*Annual Report for the Year ending May 15th, 1914*).—The total number of cases under treatment during the year was 1073, the average number resident being 794. The total number of admissions amounted to 294, which is the largest number during any year since the opening of the asylum. Fifty-eight of those admitted had been under treatment before. Alcoholic excess was found to be the cause in 75 cases, or 25 per cent. of those admitted. In 69 cases, or 23 per cent., an inherited predisposition was admitted, and in 106 cases the mental breakdown had occurred at one of the critical periods of life. There were 182 patients discharged, with a recovery rate calculated on the total admissions of 39·4 per cent. The deaths during the year numbered 105, making a death-rate, calculated on the average number resident, of 13·2 per cent. This is the largest death-rate in any one year since the asylum was opened, and is entirely due to the large number of cases admitted in a weak and exhausted condition.

Lanark District Asylum, Hartwood (*Annual Report for the Year ending May 31st, 1914*).—The average daily number resident in the asylum during the year was 1001, and the total number of admissions was 220. With regard to the causes of insanity, intemperance appeared in 26 cases, heredity in 15, epilepsy in 15, and senility in 25. The number of cases discharged was 106, and there were 65 deaths. The recovery rate was 37 per cent., reckoned on the certified admissions, and the death-rate 6½ per cent. on the average number resident. This is the lowest death-rate since 1903. Of the 65 deaths, 10 were due to general paralysis of the insane, 13 to morbus cordis, and 12 to phthisis pulmonalis. Great attention continues to be paid to the industrial employment of the patients. The levelling of the site of the new hospital was carried out wholly by the labour of the patients.

REPORT ON THE CONTAGIOUS DISEASES OF ANIMALS.[1]

THE report by Mr. A. W. Anstruther, presented to both Houses of Parliament by command of His Majesty, gives a good idea of the work the Board of Agriculture and Fisheries is doing in regard to the prevention, eradication, and control of the contagious diseases of animals. It marks an advance on any previous report yet issued, from the point of view both of the more exact methods used against disease in the light of experience gained in past years and of the pliability of scientific procedure in dealing with a scourge that in this country has baffled all preventive and curative measures for many years and has resulted in a great and largely unproductive expenditure of public money. We refer to sheep scab and swine fever.

An assurance that in a number of cases the ophthalmic test for glanders had been applied would have further rounded off some of the scientific features of this report. On the whole, however, it may be said that the record is a progressive and gratifying one, and if military operations had not checked and hindered the work of the Board it would have been still more gratifying. The war has necessitated the local authorities and their police being temporarily relieved of some of their duties; and some of the Orders, notably those against tuberculosis and mange, have been for a time suspended, whilst others have been somewhat modified.

Foot and Mouth Disease.—Tuberculosis.

Foot and mouth disease has caused the authorities much trouble and anxiety, especially on the administrative side, and since Jan. 31st, 1914, it has needed almost constant attention. Here the prompt measures taken against 29 suspected cases and 27 confirmed outbreaks have been quite effective. The fact that a good position has been maintained in regard to this disease, notwithstanding military operations and the consequent disorganisation of control methods, is very praiseworthy, whilst the value of nipping outbreaks of the epizootic in the bud cannot be over-estimated. Failure to secure early control of the disease is invariably disastrous in its consequences, as witness the outbreaks in America during the late months of last year. Preventive measures included a special order in regard to the landing of animals from Ireland, and in connexion with this it is to be noted that the report mentions that "the arrangements for the detention of animals under veterinary supervision at the port of landing have undoubtedly been useful from the point of view of reducing the risk of the spread of the disease in Great Britain as well as beneficial to the animals themselves."

Advance has been made in regard to tuberculosis, and improvements in the new Order operative from July 1st to August 6th (the date of the suspension) include the obligation of notification of those animals suffering from a chronic cough and showing definite clinical signs of tuberculosis, fixing the basis of animal valuation at the market rate, and allowing a refund from the Imperial Exchequer to the local authorities of three-fourths of the gross compensation (i.e., without any deduction in respect of the proceeds of the sale of carcasses) computed on the market value of the animal as ascertained by the valuer. The new Tuberculosis Order remains in abeyance until Oct. 1st, 1915. The notifications in July were 766, as compared with a monthly average of 568 animals under a 14 months application of the old Order. It is assumed, therefore, that there will be a marked increase in the subjects to be dealt with when the Order is revived on the same date that the Milk and Dairies Acts come into force—viz., Oct. 1st, 1915.

Swine Fever.

Gloomy to read is the statement that since 1896 the total number of cases of swine fever in Great Britain has never been higher than in 1914, and 4356 outbreaks have been confirmed. The increase in cases is ascribed chiefly to virulent outbreaks in Suffolk, Essex, and West Sussex, to the pressure on the inspectorate indirectly due to the war, and to the exceptional conditions existing in the eastern and southern counties owing to military operations. The comparatively mild winter and the great amount of wet and humid weather, combined with the increase of pig-breeding operations, probably also had their influence in augmenting the number of outbreaks. The total increase of swine in Great Britain, at the count taken in June, was 400,394, a very gratifying advance from both an economic and a zootechnical point of view.

We now come to one of the most important and valuable points in the report—important because a commencement has been made with a method of dealing with the disease long since adopted in other countries, and valuable because we shall soon know what a changed plan of action is likely to accomplish in this country. We have travelled too long on the old well-trodden way without getting any nearer to our journey's end.

On Jan. 26th, 1914, the Swine Fever Committee reported rather adversely on hitherto known methods of artificial immunisation against swine fever, but it indicated that existing modes of inoculation might be serviceably employed in controlling the disease, and it advised further experimenting to discover a trustworthy form of vaccination. A Departmental Committee recommended field observations upon selected premises with regard to serum treatment. These have been undertaken in a district round Colchester, where a virulent form of the disease was present, and the committee will soon be in a position to make a final report on the value of the method. Of course, any judgment to be useful presupposes that adequate administrative and hygienic measures will accompany the serum and virus treatment. American and German authorities assert that the double method of treatment by serum and virus blood bestows immunity for life.

Sheep Scab, Anthrax, Glanders, &c.

The double dipping Sheep Order is the result of lessons learnt from experience, and it is rather surprising that it has not been adopted earlier. Sheep scab is now to be seriously combated, and we may look to its decrease in the future. It is a pity the operation of the Order has had to be suspended, but it will be reimposed at an early date.

The outbreaks of anthrax were 128 more than in 1913. There appears to be an intimate connexion between them and the importation and use of artificial feeding-stuffs. These are legion and multiply every month. Several outbreaks on the continent have been traced to infected fish meal. We shall never improve on natural methods of feeding by artificial ones, but labour on the land never seems so productive as manufacturing operations, at any rate it is not so well organised. The perspiration of the body seems rapidly giving way to the sweat of the brow.

Glanders shows a steady decline, there being a drop of 65 in the number of outbreaks as compared with last year. A healthy result and very creditable to the Board. The trade in Russian ponies, which previously caused some outbreaks of glanders, has been suspended.

Parasitic mange shows a decrease of 279 outbreaks, but the Order is now suspended, which is unfortunate. We should have liked to read the opinion of the Board as to the reason why the disease is far and away most prevalent in London, Lancashire, and the West Riding of Yorkshire.

The dogs imported into Great Britain numbered 1250, which exceeds all previous records. They were all subjected to the Quarantine Order.

The trade in old horses materially improved under veterinary supervision up to August 3rd, 1914, when the Royal Proclamation with respect to the export of animals put an end to it.

ROYAL COLLEGE OF SURGEONS IN IRELAND AND THE CASTLE HOSPITAL.—The students of the Royal College of Surgeons, with the aid of Licentiates and Fellows, are endeavouring to maintain one ward in the Dublin Castle Red Cross Hospital. A concert in aid of this undertaking was held recently in the hall of the College, and a satisfactory sum was realised. A chief feature of the concert was a prologue written for the occasion by Mr. Oliver Gogarty, F.R.C.S. Irel.

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[1] Annual Report, by the Assistant Secretary of the Animals Division, Board of Agriculture, of Proceedings under the Diseases of Animals Acts, the Markets and Fairs (Weighing of Cattle) Acts for the Year 1914. London: Darling and Sons, Limited, Bacon-street, E.; Wyman and Sons, Limited, 29, Breams Buildings, Fetter-lane, E.C. Price 5½*d*.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned have been appointed Surgeons for temporary service in His Majesty's Fleet:—Dated April 23rd: Jack Rupert Law Willis and William Hunter Kay. Dated April 24th: John Cadzow Sinclair.

The following appointments have been notified:—Temporary Surgeons: E. F. Fox to the *Victory*, additional, for Engineering Unit, R.N. Division, Deal; H. G. Moser to the *Neptune*; J. R. L. Willis to the *Vivid*, additional, for disposal; W. S. Lynd, J. S. Kennedy, and D. S. Falconer to the *Victory*. additional, for Haslar Hospital; J. C. Sinclair and W. H. Kay to the *Pembroke*, additional, for disposal; and W. E. Goss to the *Vivid*, additional, for disposal.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Charles Devereux Marshall has been promoted to the rank of Staff Surgeon (dated March 31st).

ROYAL ARMY MEDICAL CORPS.

Major Arthur W. Mayo Robson, C.V.O., to be temporary Lieutenant-Colonel (dated March 1st). Alexander George Pemberton Gipps, late Fleet-Surgeon, Royal Navy, to be temporary Major (dated March 18th, 1915).

The undermentioned to be temporary Majors: William Pearson (dated April 7th) and James Laidlaw Maxwell (dated April 8th).

The undermentioned temporary Lieutenants to be temporary Captains:—Dated May 5th: Francis Hernaman-Johnson, late Surgeon, Royal Navy; Ernest W. Witham, late Surgeon-Captain, Assam Valley Light Horse. Dated May 4th: Albert T. Duka, D.S.O.

The undermentioned to be temporary Captains:—Dated April 7th: John Heatly Spencer, Charles Edward Murphy, Gerald Theodore Sylvester Sichel. Dated April 9th: Hector Munroe. Dated April 14th: John Aldington Gibb and Sir Vincent Nash.

The undermentioned to be temporary Lieutenants:—Dated Feb. 27th: George Norman Lorimer and Cletus McShane. Dated March 9th: Matthew Edward Robinson, Hugh Noel Murray Puckle, Reginald Morley Clarke, John William Farrar, Alan Thomas Roberts, George Dibbs King Waldron, James Ian Munro Jamieson, William Eric Giblin, William Angwin Edwards, Donald Francis Finlay, Leslie John Jarvis Nye, Lionel Braim Daly, Francis Esmond Keane, George Alexander Birnie, and Oswald Barton. Dated March 22nd: Henry Reynolds Brown. Dated March 23rd: William Arthur Rees. Dated March 25th: Herbert Ernest Clutterbuck and Sydney Williams. Dated March 27th: Thomas Paterson Noble. Dated March 30th: Theodore Henry Whittington. Dated March 31st: Ernest Harold Drinkwater. Dated April 1st: Bernard Hugh Stanley Aylward and Ernest Augustus Aylward. Dated April 7th: David Riddell, Ernest Emrys Isaac, Cuthbert John Nicholson, Frederick Talbot Driffield Clindening, Ninian McIntire Falkiner, Reginald Torriano Cooke, James Wodderspoon Bennett, Adolphe Abraham, Max Hershel Edward Richard Montesole, Hubert Vere Leigh, Roger Llewellyn Williams, John William Heekes, Thomas Dinnen Jago, Cecil Hutchinson Hopwood, William Frederick Abbott, Ernest Wardlaw Milne, Arthur James Henry Boyton, Clarence Brian Dobell, Frederick Aylmer Hort, Ian Campbell, Harry Crichton, Thomas Fearnhead, Charles Launder Chalk, Frank Louis Underwood, Everard M. le Poer Power, Martin Remers, George Burrows Brown, Duncan MacNab Callender, Lanchlan Rose, John Brown, William Douglas Knocker, John Murdo MacPhail, George Aubrey Jelly, William Kirk, Charles Fortescue Pricham, Robert Michael Forde, Thomas Paul Gray, John Ross Hoare Ross, Anthony Ashley Cooper, John Musgrave Twentyman, Ernest Morley Rooke, Charles Augustus Farrell, Marshall Hall, Alfred Ernest Carsberg, Reginald Wilton Trevor Clampett, George Howard Strettell Letchworth, Francis Sidney Mitchell, Claude Ernest Willington Wilmot, Edward Chapman Wallace, Robert Morrison Clarke, Robert Maxwell Chance, Harold Arthur Upward, Henry Herbert Clarke, and George Min Adam. Dated April 8th: Ernest Villiers Hunter, John Black Mason, Cuthbert John Butler, Benjamin Sweeter, Henry Hope Knox Sparrow, William Leggett, John Thomas Hurst, Benjamin Banks Ferrar, Robert Buchanan, William Wilfred Banham, John Henry Blakeney, Robert Scott Dewar, Cyril Herbert Thomas Ilott, George Maxwell Elliott, James Arthur Richard Lee, Alexander Charles Profeit, Robert Alexander Garden Whiting, Fife Slater, Isaac Alexander Davidson, and Norman Grenville Walsh Davidson. Dated April 9th: Robert Mitchell MacKay, Stanley James Annear Beale, Edward Alban Evans, William Macdonald, and Thomas Arthur Fuller. Dated April 10th: Ralph Christopher Fuller, Frederick Michael Kirwan, William Edmund Cooke, William Henry Hooton, George Frederick Holt, Frank Jerome Dunne, Alexander John Campbell, Finlay Stewart Campbell, Andrew Adams Rutherford, David McKinlay Reid, Henry Harold Robinson, Gerald Irving Moriarty. Hugh Tennant Prince, Augustus William Tabuteau, Cyril William Jenner, John Harold Mason, and William Walter Dickson. Dated April 12th: John Stephen Herbert Lewis, Redcliffe Nathan Salaman, John Travers McConkey, Charles Alfred Whiting Pope, Wallace Tynemouth Hedley, Edward Henry Pollock Brunton. Thomas Strain, Andrew Graham Ritchin Ritchie, George Albert Simpson, Daniel Cowin, and William Southmead Langworthy. Dated April 13th: Robert Richards, William Christopher Gavin, John Milnes Pooley, and Edmund William Lynch. Dated April 14th: William Alister Alexander, Percy Ellwand Middleton, Wilfred Edgcumbe Burrows, Walter Salisbury. Herbert John Hickin, Frank Brickwell, Alexander Elmslie Campbell, Charles James Armstrong-Dash, Ernest George Klumpp, Victor Harold Mason, Ian Macfarlane, and Henry Edward O'Brien,

Temporary Lieutenant Charles Gibson, having ceased duty with the British Red Cross Hospital, Netley, relinquishes his commission (dated April 19th).

Temporary Lieutenant Raymond J. Jones relinquishes his commission (dated Feb. 28th), as does also Temporary Lieutenant Edward M. Hime (dated April 27th).

INDIAN MEDICAL SERVICE.

The King has approved the promotion of the following officer:—Temporary Lieutenant to be Temporary Captain: Thomas Henry Bishop (dated April 18th.

The promotion of Major William Reith John Scroggie is antedated from Jan. 29th, 1914, to July 29th, 1913.

The King has approved of the retirement of Lieutenant-Colonel Robert Henry Elliot.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned ex-Cadets of the Officers Training Corps to be Lieutenants (on probation): Austin Basil Clarke, James Gordon Wilson, and Alfred Thomas Logan.

Captain Philip N. Button resigns his commission on appointment as temporary Surgeon, Royal Navy.

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd East Lancashire Field Ambulance: Lieutenant William J. Reid to be Captain, and to remain seconded.

Highland Mounted Brigade Field Ambulance: George Munro McLeod to be Lieutenant.

1st East Anglian Field Ambulance: Lieutenant Gilbert C. Gray to be temporary Captain.

1st Home Counties Field Ambulance: Henry George Lynwood Allford (late Captain, Territorial Force Reserve, General List) to be Captain (temporary).

1st East Lancashire Field Ambulance: Captain Charles Roberts is restored to the establishment.

5th London Field Ambulance: Captain John H. Dixon, from the London Mounted Brigade Field Ambulance, to be Captain.

1st North Midland Field Ambulance: Lieutenant Kenneth B. Clarke, from the Eastern Mounted Brigade Field Ambulance, to be Lieutenant.

2nd Northumbrian Field Ambulance: James Gill Hill to be Lieutenant.

4th London General Hospital: Francis Whittaker Tunnicliffe to be Captain, whose services will be available on mobilisation.

1st Northern General Hospital: The undermentioned to be Lieutenants: Sydney Havelock, Charles Henry Keay (late Cadet Lance-Corporal, Durham University Contingent, Senior Division, Officers Training Corps).

5th Northern General Hospital: Captain Bernard Stracey, from the North Midland Casualty Clearing Station, to be Captain, whose services will be available on mobilisation.

2nd Scottish General Hospital: James Miller to be Captain, whose services will be available on mobilisation.

2nd Western General Hospital: Captain Wilson H. P. Hey is seconded for service with No. 18 Field Ambulance, Royal Army Medical Corps, Special Reserve. Captain Charles Roberts, from 1st East Lancashire Field Ambulance, to be Captain.

1st London (City of London) Sanitary Company: Daniel McPherson Taylor to be Lieutenant.

Lowland Casualty Clearing Station: Lieutenant Geoffrey B. Fleming to be Captain.

South Midland Casualty Clearing Station: Major Peverel S. Hichens, from Attached to Units other than Medical Units, to be Major.

Northumbrian Casualty Clearing Station: Harold Muir Evans (late Surgeon-Captain, 1st Norfolk (Volunteers) Artillery) to be Major (temporary). Second Lieutenant Colin Mearns, from the Durham Light Infantry, to be Lieutenant.

West Riding Casualty Clearing Station: Peter McEwan to be Lieutenant.

London Mounted Brigade Field Ambulance: Captain William B. Thomas to be temporary Major.

3rd East Anglian Field Ambulance: John Norman Robins to be Lieutenant.

3rd Lowland Field Ambulance: Lieutenant Archibald C. McMaster to be Captain.

2nd Eastern General Hospital: Harold Harris Elborough Scatliff (late Captain, Sussex Royal Garrison Artillery) to be Captain, whose services will be available on mobilisation (temporary).

Attached to Units other than Medical Units.—Lieutenant Louis B. Stringer resigns his commission.

Indian Medical Service Commissions.

An examination for not less than 10 Commissions in His Majesty's Indian Medical Service will be held in London on July 12th, 1915, and the five following days. Particulars and forms of application can be obtained from the Military Secretary, India Office, London, S.W.

Journal of the Royal Army Medical Corps.

The current number of this journal, dated January, gives first place to a preliminary note on the treatment of anaerobe-infected wounds with lactic acid. While engaged in the study of the flora of septic wounds it occurred to Major L. W. Harrison, D.S.O., the author of the note, that since anaerobes of the gas-brand and malignant œdema series degenerate, fail to spore, and do not liberate toxin in a distinctly acid culture medium, wounds might be treated in a manner which would make the discharge distinctly acid to litmus. Two severe cases are described in which wounds were treated with lactic acid, and, although one patient died, Major Harrison believes that the activity of the anaerobes was hampered more than by other modes of treatment. He has no evidence, however, that lactic acid is of any use against cocci. In a joint paper by Major E. A. Bourke, Lieutenant Idris D. Evans, and Lieutenant Sydney Rowlands on Preliminary Observations on the Use of an Autogenous Living Vaccine in the Treatment of Enteric Fever the authors describe six cases in which the employment of autogenous living vaccine produced satisfactory results, and the writers hope that the method of treatment will be given a more extensive trial. Major M. F. Foulds has an interesting note on the use of tincture of iodine in the prevention of venereal diseases. Among other contents of the journal is the description of the conversion of a railway porter's truck into a carrying chair for the wounded and of a form of folding trestle for the conversion of a stretcher into an improvised bed, both useful devices.

VITAL STATISTICS.

VITAL STATISTICS OF LONDON DURING MARCH, 1915.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the 10 diseases specified in the table was equal to an annual rate of 6·6 per 1000 of the population, estimated at 4,516,612 persons; in the three preceding months the rates were 9·2, 7·4, and 7·4 per 1000 respectively. The lowest rates last month were recorded in Kensington, Chelsea, Hampstead, Poplar, and Bermondsey; and the highest rates in Bethnal Green, Holborn, Deptford, Greenwich, and Woolwich. Two cases of small-pox, both belonging to Greenwich, were notified during the month. The prevalence of scarlet fever showed a marked decline from that recorded in other recent months; this disease was proportionally most prevalent in Hammersmith, Holborn, Bethnal Green, Greenwich, and Woolwich. The Metropolitan Asylums Hospitals contained 2514 scarlet fever patients at the end of the month, against 4431, 3609, and 2989 at the end of the three preceding months; the weekly admissions averaged 278, against 445, 317, and 324 in the three preceding months. Diphtheria was less prevalent than in the previous month; among the several boroughs the greatest proportional prevalence was recorded in Holborn, the City of London, Bethnal Green, Stepney, and Deptford. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1663, 1621, and 1562 at the end of the three preceding months, had further declined to 1362 at the end of the month the weekly admissions averaged 142, against 177, 160 ,and 172 in the three preceding months. Enteric fever was very much less prevalent than it had been in the preceding month; the greatest proportional prevalence was recorded in Southwark, Bermondsey, Deptford, and Woolwich. The Metropolitan Asylums Hospitals contained 46 enteric fever patients at the end of the month, against 68, 50, and 64 at the end of the three preceding months; the weekly admissions averaged 8, against 10, 6, and 13 in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Shoreditch, Bethnal Green, Southwark, and Woolwich. The 21 cases of puerperal fever notified during the month included 2 each in Islington, Hackney, Poplar, Bermondsey, Wandsworth, and Camberwell. The cases of cerebro-spinal meningitis numbered 154, this disease being proportionally most prevalent in Hammersmith, Shoreditch, Greenwich, and Woolwich. The 4 cases of poliomyelitis included 2 in Islington and 2 in Wandsworth.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex and age constitution of the populations of the several boroughs. During the five weeks ending April 3rd the deaths of 9181 London residents were registered, equal to an annual rate of 21·2 per 1000; in the three preceding months the rates were 16·7, 19·6, and 20·7 per 1000. The death-rates during the month ranged from 15·5 in Lewisham, 16·8 in Hampstead, 17·7 in Fulham, 18·1 in Wandsworth, and 18·3 in Hackney, to 25·1 in Finsbury, 25·2 in Chelsea, 26·1 in the City of London, 26·5 in Southwark, and 29·1 in Bermondsey. The 9181 deaths from all causes included 1073 which were referred to the principal infectious diseases; of these, 666 resulted from measles, 38 from scarlet fever, 71 from diphtheria, 188 from whooping-cough, 12 from enteric fever, and 98 from diarrhœa and enteritis among children under 2 years of age. The lowest death-rates from these diseases in the aggregate were recorded in Chelsea, Hackney, the City of London, Shoreditch, and Lewisham; and the highest rates in Paddington, Kensington, Bethnal Green, Bermondsey, and Battersea. The 666 deaths from measles were more than double the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Paddington, Kensington, Fulham, Bethnal Green, Bermondsey, and Battersea. The 38 fatal cases of scarlet fever were 17 in excess of the corrected average number, and included 4 in Lambeth and 3 each in Hammersmith, St. Pancras, Stepney, Battersea, and Wandsworth. The 71 deaths from diphtheria were 19 above the corrected average number; this disease showed the greatest proportional mortality in Paddington, St. Pancras, Hackney, Holborn, Bethnal Green, Stepney, Poplar, and Deptford. The 188 deaths from whooping-cough exceeded the corrected average by 22; the highest death-rates from this disease were recorded in Holborn, Finsbury, Bethnal Green, Poplar, Bermondsey, Battersea, Deptford, and Greenwich. The 12 deaths referred to enteric fever were 4 above the corrected average, and included 2 in Paddington, 2 in Poplar, and 2 in Deptford. The mortality from diarrhœa and enteritis among children under 2 years of age was proportionally greatest in Holborn, Bethnal Green, Poplar, Southwark, Bermondsey, Greenwich, and Woolwich. In conclusion, it may be stated that the aggregate mortality in London during the month from the principal infectious diseases, excluding diarrhœa, was nearly 79 per cent. above the average.

HEALTH OF ENGLISH TOWNS.

In the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8952 births and 6022 deaths were registered during the week ended Saturday, May 1st. The annual rate of mortality in these towns, which had been 19·9, 19·0, and 17·4 per 1000 in the three preceding weeks, further fell in the week under notice to 17·3 per 1000 of their aggregate population, estimated at 18,134,239 persons at the middle of last year. During the first four weeks of the current quarter the mean annual death-rate in these towns averaged 18·4, against a corresponding rate of 19·6 per 1000 in London. Among the several towns the death-rate last week ranged from 8·4 in Blackpool, 8·9 in Carlisle, 9·2 in Norwich, 9·3 in Southend-on-Sea, and 10·2 in Enfield to 23·8 in St. Helens, 23·9 in Sunderland, 24·0 in West Bromwich, 25·6 in Wigan, and 30·5 in Middlesbrough.

The 6022 deaths from all causes were 41 fewer than the number in the previous week, and included 711 which were referred to the principal epidemic diseases, against numbers declining from 826 to 689 in the four preceding weeks. Of these 711 deaths, 392 resulted from measles, 142 from whooping-cough, 73 from infantile diarrhœal diseases, 56 from diphtheria, 34 from scarlet fever, 12 from enteric fever, and 2 from small-pox. The mean annual death-rate from these diseases was equal to 2·0 per 1000, and coincided with that recorded in the previous week. The deaths attributed to measles, which had declined from 495 to 389 in the four preceding weeks

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING MARCH, 1915.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1914.	NOTIFIED CASES OF INFECTIOUS DISEASE.												DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhoea and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON	**4,516,612**	**2**	**1474**	**787**	**2**	**59**	—	**21**	**341**	**154**	**4**	**2844**	**6·6**	—	**666**	**38**	**71**	**188**	**12**	**98**	**1073**	**2·5**	**9181**	**21·2**
West Districts.																								
Paddington	142,055	—	37	22	—	—	—	—	12	3	—	74	5·4	—	47	2	3	1	2	4	59	4·3	317	23·2
Kensington	170,817	—	40	17	—	2	—	1	7	8	—	75	4 6	—	54	2	3	5	—	4	68	4·2	337	20·5
Hammersmith	124,750	—	64	13	—	—	—	—	6	15	—	98	8·2	—	17	3	—	5	—	3	28	2·3	260	21 4
Fulham	158,849	—	58	21	—	1	—	1	5	6	—	92	6·0	—	36	2	2	2	1	2	45	3·0	261	17·7
Chelsea	63,791	—	13	9	—	—	—	—	5	1	—	28	4·6	—	4	—	1	1	—	1	7	1·1	162	25·2
City of Westminster	152,346	—	63	26	—	1	—	—	5	4	—	99	6 8	—	11	1	1	2	—	2	17	1·2	294	21·2
North Districts.																								
St. Marylebone	112,892	—	47	15	—	—	—	—	5	3	—	70	6·5	—	20	—	2	3	—	3	28	2·6	220	20·7
Hampstead	86,731	—	19	10	—	—	—	—	5	2	—	36	4 3	—	8	—	1	—	—	1	10	1·2	132	16·8
St. Pancras	212,497	—	61	36	—	3	—	1	14	12	—	127	6 2	—	12	3	6	6	—	6	33	1·6	413	20·2
Islington	324,764	—	89	57	—	5	—	2	16	8	2	179	5·7	—	43	2	6	20	—	4	75	2·4	694	21·7
Stoke Newington	50,454	—	19	11	—	1	—	—	6	1	—	38	7·9	—	10	—	1	—	—	—	11	2·3	97	19·0
Hackney	223,724	—	43	34	—	1	—	2	27	6	—	113	5·3	—	8	—	5	4	—	2	19	0·9	390	18 3
Central Districts.																								
Holborn	45,861	—	23	11	—	—	—	1	2	2	—	39	8 9	—	7	1	2	4	—	2	16	3 6	102	23·3
Finsbury	83,212	—	29	12	—	—	—	1	6	—	—	48	6·0	—	2	—	1	7	—	2	12	1·5	203	25·1
City of London	17,129	—	4	6	—	—	—	—	1	—	—	11	6·7	—	—	—	—	—	—	1	1	0·6	41	26·1
East Districts.																								
Shoreditch	108,869	—	35	21	—	1	—	1	14	8	—	80	7 7	—	6	1	—	4	—	1	12	1·1	212	21·0
Bethnal Green	127,662	—	63	41	—	1	—	—	16	4	—	125	10·2	—	32	1	5	10	—	5	53	4·3	284	24·1
Stepney	273,265	—	101	91	2	3	—	1	22	3	—	223	8·5	—	18	3	6	1	—	4	32	1·2	509	20·2
Poplar	160,222	—	27	22	—	—	—	2	17	5	—	73	4 8	—	33	—	4	11	2	7	57	3·7	386	24·8
South Districts.																								
Southwark	186,941	—	43	32	—	4	—	1	22	3	—	105	5·9	—	37	1	3	8	1	7	57	3·2	472	26·5
Bermondsey	124,213	—	24	17	—	4	—	2	9	2	—	58	4·9	—	30	1	—	26	—	4	61	5·1	348	29·1
Lambeth	296,724	—	89	45	—	3	—	1	22	5	—	165	5·8	—	29	4	4	6	—	6	49	1·7	626	21·6
Battersea	167,338	—	61	31	—	3	—	—	17	4	—	116	7·2	—	41	3	3	20	1	4	72	4·5	365	22·9
Wandsworth	338.998	—	96	58	—	5	—	2	21	12	2	196	6·0	—	68	3	3	12	—	7	93	2·9	586	18·1
Camberwell	262,020	—	74	33	—	—	—	2	11	[illegible]	—	128	5·1	—	33	2	2	8	—	3	48	1·9	535	21·1
Deptford	109,182	—	39	27	—	12	—	—	12	3	—	93	8·9	—	15	—	4	10	2	2	33	3·2	249	23·5
Greenwich	96,037	2	76	11	—	1	—	—	9	5	—	104	11·3	—	18	1	1	9	1	3	33	3·6	202	21·5
Lewisham...	172,433	—	64	29	—	3	—	—	6	3	—	105	6·4	—	11	—	1	2	1	3	18	1·1	261	15·5
Woolwich...	122,836	—	73	29	—	4	—	—	21	18	—	145	12·3	—	16	2	1	1	1	5	26	2·2	223	19·4
Port of London	—	—	—	—	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex and age constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

slightly rose to 392 last week, and caused the highest annual death-rates of 3·4 in Sunderland, 3·7 in Edmonton, 3·8 in Wolverhampton, 4·0 in Barrow-in-Furness, 4·1 in Middlesbrough, 4·3 in Merthyr Tydfil, 5·0 in Walsall, 5·3 in West Bromwich, and 6·9 in Northampton. The deaths referred to whooping-cough, which had been 167, 151, and 149 in the three preceding weeks, further fell to 142 last week; the highest recorded death-rates from this disease were 1·3 in Southampton, 1·5 in Walthamstow, 1·6 in Middlesbrough, 1·8 in Great Yarmouth, 2·0 in Wakefield, 2·4 in Rotherham, 2·6 in St. Helens, 3·5 in Stockton-on-Tees, and 5·7 in Wigan. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 67, 63, and 65 in the three preceding weeks, further rose to 73 last week, and included 17 in London, and 4 each in Leicester and Middlesbrough. The deaths attributed to diphtheria, which had been 49, 55, and 49 in the three preceding weeks, rose to 56 last week, of which 12 were registered in London, 5 in Stoke-on-Trent, 3 each in Leyton, Birmingham, and Bradford. The deaths referred to scarlet fever, which had increased from 16 to 29 in the four preceding weeks, further rose to 34 last week, and included 9 in London, 3 each in Manchester and Sheffield, and 2 each in Willesden, Stoke-on-Trent, Birmingham, Bradford, and Gateshead. The fatal cases of enteric fever, which had been 7, 11, and 8 in the three preceding weeks, rose to 12 last week, and included 3 in Salford and 2 each in London, Stoke-on-Trent, and Leeds. The 2 deaths from small-pox belonged to Bristol.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily declined from 5036 to 2369 in the 22 preceding weeks, had risen to 2377 on Saturday last; 316 new cases were admitted during the week, against 275, 263, and 259 in the three preceding weeks. These hospitals also contained on Saturday last 1230 cases of diphtheria, 274 of measles, 62 of enteric fever, and 16 of whooping-cough, but not one of small-pox. The 1575 deaths from all causes in London were 44 fewer than in the previous week, and corresponded to an annual death-rate of 18·2 per 1000. The deaths referred to diseases of the respiratory system, which had been 466, 469, and 392 in the three preceding weeks, further fell to 347 in the week under notice, but were 162 in excess of the number in the corresponding week of last year. The deaths from influenza numbered 30, against 46, 39, and 27 in the two preceding weeks.

Of the 6022 deaths from all causes in the 96 towns 215 resulted from different forms of violence and 408 were the subject of coroners' inquests, while 1703 occurred in public institutions. The causes of 35, or 0·6 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in 13 of its 14 suburban districts, in Leeds, Bristol, Bradford, Hull, Newcastle-on-Tyne, and in 56 other smaller towns. Of the 35 uncertified causes of death, 5 were registered in Birmingham, 4 in Liverpool, 3 each in West Bromwich and Gateshead, and 2 each in Stoke-on-Trent, Preston, and Sheffield.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,345,500 persons at the middle of this year, 1285 births and 909 deaths were registered during the week ended Saturday, May 1st. The annual rate of mortality in these towns, which had been 20·8, 20·9, and 18·5 per 1000 in the three preceding weeks, rose to 20·2 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these towns averaged 20·1, against a corresponding rate of 18·4 per 1000 in the large English towns. Among the several towns the death-rate last week ranged from 12·8 in Kirkcaldy, 12·9 in Clydebank, and 14·9 in Hamilton, to 21·3 in Coatbridge, 23·3 in Leith, and 25·0 in Dundee.

The 909 deaths from all causes were 75 in excess of the number in the previous week, and included 150 which were referred to the principal epidemic diseases, against numbers declining from 181 to 128 in the four preceding weeks. Of these 150 deaths, 82 resulted from whooping-cough, 36 from measles, 12 from diphtheria, 11 from scarlet fever, and 9 from infantile diarrhœal diseases, but not one from enteric fever or from small-pox. The mean annual death-rate from these diseases was equal to 3·3, against a corresponding rate of 2·0 per 1000 in the large English towns. The deaths attributed to whooping-cough, which had been 75, 90, and 75 in the three preceding weeks, rose to 82 last week, and included 42 in Glasgow, 14 in Dundee, 8 in Edinburgh, and 4 each in Paisley and Greenock. The deaths referred to measles, which had been 41, 19, and 26 in the three preceding weeks, further rose to 36 last week, of which 25 were registered in Glasgow and 9 in Aberdeen. The fatal cases of diphtheria, which had been 11, 7, and 6 in the three preceding weeks, rose to 12 last week, and included 2 each in Glasgow, Leith, and Motherwell. The deaths attributed to scarlet fever, which had been 6, 7, and 7 in the three preceding weeks, further rose to 11 last week, of which 3 occurred in Glasgow, and 2 each in Leith and Clydebank. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 18, 10, and 12 in the three preceding weeks, fell to 9 last week, and included 2 in Leith and 2 in Kilmarnock.

The deaths referred to diseases of the respiratory system, which had been 182, 178, and 145 in the three preceding weeks, rose to 153 in the week under notice, and were 63 in excess of the number in the corresponding week of last year. The deaths attributed to violence numbered 25, against 21 and 30 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,212,380 persons at the middle of this year, 658 births and 444 deaths were registered during the week ended Saturday, May 1st. The annual rate of mortality in these towns, which had been 23·8, 22·1, and 22·4 per 1000 in the three preceding weeks, fell to 19·1 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these towns averaged 21·9, against corresponding rates of 18·4 and 20·1 per 1000 in the English and Scotch towns respectively. The death-rate last week was equal to 19·0 in Dublin (against 18·2 in London and 21·1 in Glasgow), 19·8 in Belfast, 17·7 in Cork, 24·0 in Londonderry, 19·0 in Limerick, and 17·1 in Waterford, while in the 21 smaller towns the mean death-rate was 17·8 per 1000.

The 444 deaths from all causes were 77 fewer than the number in the previous week, and included 35 which were referred to the principal epidemic diseases, against 30 and 41 in the two preceding weeks. Of these 35 deaths, 11 resulted from measles, 10 from infantile diarrhœal diseases, 9 from whooping-cough, 3 from diphtheria, and 2 from scarlet fever, but not one from enteric fever or from small-pox. The mean annual death-rate from these diseases was equal to 1·5, against corresponding rates of 2·0 and 3·3 per 1000 in the English and Scotch towns respectively. The deaths attributed to measles, which had been 16, 5, and 13 in the three preceding weeks, fell to 11 last week, and included 7 in Belfast and 2 in Dublin. The deaths of infants (under 2 years) referred to diarrhœa and enteritis, which had been 3, 5, and 5 in the three preceding weeks, further rose to 10 last week, of which 4 were registered in Dublin and 2 each in Belfast and Lisburn. The fatal cases of whooping-cough, which had been 15, 11, and 20 in the three preceding weeks, fell to 9 last week, and included 5 in Belfast and 2 in Dublin. Of the 3 deaths attributed to diphtheria, 2 occurred in Dublin and 1 in Newtownards. The 2 fatal cases of scarlet fever were recorded in Belfast and Waterford.

The deaths referred to diseases of the respiratory system, which had been 158, 119, and 104 in the three preceding weeks, further declined to 84 in the week under notice. Of the 444 deaths from all causes, 131, or 30 per cent., occurred in public institutions, and 8 resulted from various forms of violence. The causes of 10, or 2·3 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the large English towns the proportion of uncertified causes did not exceed 0·6 per cent.

Glasgow Lock Hospital.—The 109th annual report of this institution (for the year 1914) shows that 300 patients were admitted to the hospital, as against 240 in 1913 and 251 in 1912. The number of patients who left irregularly, or before their cure had been completed, was 15. Of the total number of patients admitted during the year 205 were received for the first time, 69 for the second, 23 for the third, 2 for the fourth, and 1 for the eighth time. The 384 out-patients made 1070 visits, as compared with 217 out-patients with 501 visits in 1913. The out-patients of 1914 had all at one time been in-patients. The average period of sojourn in the hospital was 42 days, and the average age of the patients 24 years. The patients included infants and girls of most ages between 2 and 16. The financial statement shows the ordinary income to have been £1301 19*s.* 6*d.*, and the ordinary expenditure £1500 7*s.*, leaving a deficiency of £198 7*s.* 6*d.*, which compares with a deficit of £4 10*s.* 3*d.* in 1913. The extraordinary income consisted of legacies amounting to £131, and after deducting special expenditure there is a debit balance of £390 15*s.* 10*d.* to be carried to capital.

Correspondence.

"Audi alteram partem."

THE MENTAL TREATMENT BILL.

To the Editor of The Lancet.

Sir,—The letter of Dr. Edwin Ash in The Lancet of May 1st emphasises the long-felt public want which the Voluntary Mental Treatment Bill introduced into the House of Lords last spring by the Earl Russell completely meets.

Both this Bill and that of Mr. Cecil Harmsworth aim at precisely the same object, for both enable early mental symptoms "in whatever case and from whatever cause" to be "treated" for a limited period without the usual legal certificate. The only difference is that Mr. Harmsworth's Bill provides no safeguards against abuse, and in the opinion of a great number who realise the danger it is felt there should be some guarantee that this power should be used solely in the interests of the sufferer.

In this Bill there is a complete disregard of such an assurance, and this omission may amount to the legal sanction of licence in the name of liberty.

I am, Sir, yours faithfully,
Robert Armstrong-Jones, M.D. Lond.

Claybury, May 4th, 1915.

To the Editor of The Lancet.

Sir,—Will you permit me to make reference in your influential columns to a few points in relation to the Bill "to facilitate the early treatment of mental disorder of recent origin arising from wounds, shock, or any other cause"; which definition makes it applicable to any case of slight mental loss of balance of whatever nature, among civilians as well as among soldiers.

The first announcement of the Bill described it as a "War Emergency" measure, and gave it to be understood that it was introduced for the benefit of the soldiers; but, as admirably pointed out in your leading article of last week, it has no application to soldiers as soldiers at all. The soldier, while he remains in the army, is not certified, the strict military control in which he is there held being quite sufficient as a form of detention. The plea of emergency on the soldier's behalf therefore falls to the ground. It is when the soldier, after discharge from the army, returns to civilian life that he runs the great risk, as a civilian, if still unrecovered, of being placed under detention (should this Bill pass) without the safeguard of any legal procedure or appeal to a magistrate. This is a very serious matter, since it applies to the whole civil population, and introduces a most dangerous innovation, under the specious plea of temporary urgent necessity. The real necessity at all times is that the individual alleged to be of unsound mind should have his case fairly and impartially sifted and be heard in self-defence. Before the passing of the Lunacy Act, 1890, the public had been sharply roused to a realisation of the subterranean perils to which any of them might be at any time insidiously exposed.

A Bill is now brought in of retrograde tendency allowing a person of slight mental instability to be "taken charge of" for profit, and without penalty, for a period of six months, provided only that the person taking him in charge complies with certain regulations to be subsequently made by the Home Secretary and Lord Chancellor who represent the Executive of the Lunacy Commission. The Lunacy Commission is thus to be given the prerogative of substituting its permission or prohibition in this matter for the stringent provisions of the Lunacy Act, 1890. It is to make its own rules as to the conditions under which free British subjects may be "taken charge of" by "nursing homes" or other institutions run for profit, the legal safeguards of the Lunacy Act being meanwhile in abeyance. The House of Commons is asked, by endorsement of this extraordinary principle of the Bill, to "shut its eyes and swallow."

The Memorandum prefixed to the Bill gives us to understand the passing of the Bill is urgent on behalf of all kinds of patients suffering from nervous breakdown. It states that the law, as it now stands, prevents residential treatment of such cases unless they are certified as insane and sent to an institution under the Lunacy Acts. But there is no provision in English law which prohibits such cases being treated on medical lines in hospitals or homes so long as the patients are not "certifiable," and so long as compulsory detention is not exercised.

It would be well if the promoters of this Bill would give it clearly to be understood whether detention is included in Section 1 or not, the term "to take charge of" being extremely vague. If detention is not intended why bring in the Bill, since the law, as it stands, allows of treatment in hospitals or homes, provided the patient is not detained. The leading article in the *British Medical Journal* of May 1st is more explicit. It speaks quite unreservedly of curative detention and of the folly of insisting on the patient's freedom, where detention is necessary for cure. That is exactly the point. If detention has become necessary, the patient has become certifiable—i.e., it has become dangerous to leave him free—consequently his liberty must be restricted, and at the same moment, in consequence of the risk of unscrupulous dealings towards one unable to help himself, it is acknowledged on all hands, and has been strictly embodied in the Lunacy Act, 1890, that legal procedure is in this case obligatory, and appeal to judicial intervention necessary.

In the Memorandum prefixed to Mr. Harmsworth's Bill much stress is laid on the "stigma" which attaches to an individual who has been certified. It has even been asserted that if there were no legal procedure, there would be no stigma. This is a fatal confusion of ideas. It is not the provision for strict legal procedure that causes the stigma. It is the fact of the existence of a dangerous condition of mind necessitating detention. This necessity for detention originates the stigma, and not the law. The function of the law is protective, and we run into great danger if we allow detention to be exercised in contravention of the safeguards of the law.

The author of the article in the *British Medical Journal* speaks of a possible amendment to Mr. Harmsworth's Bill, to the effect that a patient may "accept" the treatment. But it does not need a Bill to oblige the patient to "accept." If the patient's mental state is such that he is uncertifiable, he can make the choice for himself without being obliged to do so by a Bill. It is a contradiction in terms to compel a so-called "voluntary" patient to accept treatment in an institution for the insane. The Bill brought in by Earl

Russell on July 22nd, 1914, had this aim. He himself explained at a Medico-Legal meeting on June 30th, 1914, that the patient would have no choice when sent in by a doctor; but the initial detention could not be continued against his will—i.e., in the event of his discovering that he had the right to leave. This would seem an anomalous arrangement. The writer in the *British Medical Journal* sums up his remarks by a suggestion which, he says, commends itself for its simplicity—viz., to adopt the last clause of Section 13 of the Scotch Lunacy Act, 1866, by which any doctor can send anyone to an asylum for six months on his own sole authority.

This measure, much as it may possibly commend itself to many doctors, will scarcely meet with the same unqualified approval from the great majority of British subjects. The writer says that for years the organised body of English alienists and expert opinion on lunacy has been calling for the incorporation of this measure into English law. It remains to be seen whether the public will also call for it. It is maintained that with the march of progress the question of disorder of the mind begins to be "regulated by scientific considerations."[1] This new consideration is, however, still in its extreme infancy. What we require above everything else is that all mental affections should be genuinely taken into account as a branch of medicine. Insanity is not and cannot be checked by the present methods of treatment. It is both unnatural and unscientific to regard mental treatment as a speciality, secluded from the light which might be thrown on it by every other branch of medicine. Mental treatment has often been of the crudest description, and has failed signally in reducing the prevalence of this worst of mortal ills. The reason of this is that its beginnings have been overlooked. The dread of the prison-bars of detention has stood in the way of every early effort at success. The only method by which the painful sense of indignity and utter insecurity can be removed, is to treat the earliest stages differently. We want places where early cases will not be afraid to come of their own accord for treatment—hospitals where prevention and common-sense will come into action much earlier. We want not more detention, but far less. We want free air and sunshine to penetrate into obscure recesses, and all the skill of medical care, therapeutic resource, and the best all-round intelligence to be brought to bear upon the treatment of derangement of our highest faculties, and this at its very earliest stage. How this can best be facilitated I must leave, with your kind permission, to a future occasion.—I am, Sir, yours faithfully,

S. E. WHITE, M.B. Lond.

Upper Montagu-street, W., May 4th, 1915.

THE MANUFACTURE OF SALVARSAN PRODUCTS IN ENGLAND AND FRANCE.

To the Editor of THE LANCET.

SIR,—I have read in your issue of last week Dr. David Watson's criticisms on my letter of April 3rd, in which he suggests that my diagnosis of arsenical poisoning following an injection of novarsenobenzol "Billon" was incorrect, and that the symptoms might have been "partly or entirely" due to "a mercurial dermatitis." I can only say that it is unprecedented for a case of mercurial dermatitis to persist for nearly four months, and notwithstanding treatment to still show symptoms of that condition; the patient referred to is still in hospital, and the skin over his whole trunk and lower limbs is at the present moment of a brick-red colour and is covered with branny desquamation. If this is Dr. Watson's experience of mercurial dermatitis I am happy to say that that condition is not met with in this metropolis.

In his apologia for Burroughs and Wellcome's preparation kharsivan Dr. Watson states that he has produced sufficient evidence to warrant the conclusion that a dose of 0·6 grm. of that substance is inadvisable; but that firm, in one of their leaflets with which the medical profession is not altogether unfamiliar, states that "kharsivan is to be used in precisely the same manner and dosage as the German product." Dr. Watson further states "that salvarsan is not less toxic than kharsivan in similar dosage is proved by our records," and therefore I presume there is nothing more to be said, though I have given some thousands of injections of salvarsan without having met with any such untoward symptoms as those described in your issues of April 3rd and May 1st.

It is perhaps somewhat *mal à propos* that immediately preceding Dr. Watson's letter in THE LANCET last week there appears my communication of two further cases of arsenical poisoning following injections of kharsivan, one of which unhappily proved fatal. Possibly Dr. Watson will be able to explain this case to his own satisfaction, but the position is this: a healthy young man contracts syphilis; he is given two intravenous injections of kharsivan; he develops symptoms of arsenical poisoning from which he dies one month later, and as to the diagnosis of death there can, unfortunately, be no mistake.

I am, Sir, yours faithfully,

J. ERNEST LANE,
Surgeon to the London Lock Hospital.

Queen Anne-street, W., May 2nd, 1915.

CLINICAL RESULTS OF KHARSIVAN, BILLON, AND NEOKHARSIVAN.

To the Editor of THE LANCET.

SIR,—The following results of the injection of these drugs may be of interest at the present moment.

Kharsivan.

No. of cases.	Headache.	Vomiting.	Temperature.	Other ill-effects.
78 (25 with no previous arsenical treatment): Primary 2, secondary 50, late secondary 24, tertiary 2.	10%	5%	12·5%; maximum 100·8° F. No temperature in 7 cases with our own re-distilled water.	Nil, except 1 case of bronchial pain lasting 2 days.

Kharsivan is an arsenical preparation made by Messrs. Burroughs, Wellcome, and Co., having a formula exactly similar to salvarsan ("606")—$C_{12}H_{12}O_2N_2As_2(HCl)_2 2H_2O$. It is a yellow acid powder dissolving with some difficulty in water and rather darker than "606." To prepare the drug for intravenous injection 250 c.c. of 0·5 per cent. saline solution made with doubly distilled water and a 15 per cent. solution of caustic sodium hydroxide are required.

According to directions 30 c.c. of doubly distilled water were put in a narrow graduated stoppered flask, to this the powder was added, and the whole shaken vigorously until the powder dissolved (latterly saline was used and the powder dissolved in it equally well). Caustic sodium hydroxide solution 15 per cent. was then added, until the precipitate first found cleared. Sterile saline solution was next added up to 250 c.c.; the solution often became cloudy on adding the saline, and then caustic sodium hydroxide was added drop by drop until after vigorous shaking the solution remained clear. The quantity of 15 per cent. solution needed varied considerably, 14 minims being the least used, 34 minims the most, for a 0·4 gramme dose. In all cases the solution was tested with litmus paper, and never gave more than a faintly alkaline reaction. The solution was always given cold and intravenously, and in no case was a vein cut down upon.

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[1] See article in Times.

In every case saline or distilled water was run in before and after the kharsivan. The addition of saline to run in after the injection caused the last part of the solution to become cloudy. Distilled water had not this effect to the same extent. In seven cases our own doubly distilled water was used with *no* after-effects at all. The dosage given never exceeded 0·45 gramme. In a large majority the dose was 0·4 gramme. All the patients were females.

Billon.

This drug was first prepared by one of us with unsatisfactory distilled water, in that the still was old and useless, and it was found that the water was seldom doubly distilled.

Billon with Unsatisfactory Water.

No. of cases.	Headache.	Vomiting.	Temperature.	Other ill-effects.
19 (secondary 15, late secondary 4).	36·8 %	15·7%	52%. Maximum 103° F.	Rigors 15·7%

In the three patients who suffered from rigors these occurred ½ hour, 1½ hours, and 5 hours after injection. In two of the cases too large a dose was given—viz., 0·6 gramme to children of 15 years.

Billon with Satisfactory Water.

No. of cases.	Headache.	Vomiting.	Temperature.	Other ill-effects.
31 (primary, 12, secondary 12, tertiary 7).	6·4%	3 %	Nil.	Nil.

Of the 26 cases given at the Lock Hospital (18 secondary and 8 late secondary), 10 had had no previous arsenical treatment.

Novarsenobenzol "Billon" is the dioxydiamido-arsénobenzol (monométhylène) sulfoxylate de soude—viz., "914." It is of French preparation, the manufacturers being Poulenc Frères. It consists of a yellow powder, darker and more yellow than the original "914," very soluble in water, forming a perfectly clear yellow solution. To prepare the powder for use it was dissolved in 20 to 30 c.c. of doubly distilled water and given intravenously, a small quantity of the water being introduced before and after the drug. The dosage given was from 0·45 gramme to 0·6 gramme, the patients being both male and female. One of us gave 24 injections of "Billon" to private cases, mostly male patients, who received 0·6 gramme, but one female patient with the same dose vomited and suffered from headache; she had no temperature. She was suffering from two alveolar abscesses at the time. The others had no after-symptoms whatever. All had had no previous arsenical treatment.

Neokharsivan.

No. of cases.	Headache.	Vomiting.	Temperature.	Other ill-effects.
36 (10 had bad no previous arsenical treatment): Primary 3, secondary 21, late secondary 12.	14%	2·6% (1 case).	2·6% (1 case—i.e., 1 case of 102·4°).	Rigor occurred in the 1 temperature case.

In the one case of rigor, pyrexia, and vomiting, the rise in temperature occurred about four hours after injection. The patient was perfectly well 24 hours later. There was no reaction with a previous and a later dose of kharsivan.

Neokharsivan is prepared by Burroughs, Wellcome, and Co., and is declared to be identical in essential particulars with "914." It is a yellow powder, a little darker than "914," very easily soluble in water, yielding a clear solution. For intravenous injection the powder was dissolved in from 30 to 60 c.c. of doubly distilled water, doubly distilled water being introduced before and after the drug. The dose given ranged from 0·45 to 0·6 gramme.

General remarks.—The intervals between the injections varied in different cases from one to five weeks, there being two routine treatments used: (*a*) at intervals of seven to ten days, (*b*) at intervals of one month, all patients receiving full doses of mercury.

The hospital patients had the following preparation:—Pil col. cum hyosc., 4 grs., at 6 P.M.; mist. alb. at 2 A.M.; en. sap. at 5 A.M.; glass of hot milk at 10 A.M., and nothing more for four hours before injection. These patients remained in bed until the afternoon of the following day and took no solid food for about 24 hours after injection. The preparations were always given cold and as soon after mixing as possible, the bottle being kept well stoppered and tightly corked until the drug was used. Ether was rubbed over the vein before the insertion of the needle.

An aperient was administered to private patients on the preceding day, no breakfast, but a cup of tea and a piece of toast at 8 A.M., the injection being given at 10 A.M.; this was followed immediately by an ordinary breakfast, after which the patient remained in bed from two to six hours only.

Results.—The results of these three drugs were entirely satisfactory when we were using doubly-distilled water of assured purity. All the patients (164) were improved in health and increased in weight. The disappearance of symptoms seemed to be much the same as in Ehrlich's last preparations. Some cases which had failed to respond to mercury responded readily to arsenic. This was very noticeable in three cases of iritis. Four of the patients were suckling and the babies suffered no ill-effects. No local disturbance was noticed in the vein of the arm. All were perfectly well 48 hours after the injections and to the present date. The Wassermann results in private cases were negative. The urine was free from albumin except in one case—slight for two days only.

Headache is the only symptom which is more marked in these drugs than in Ehrlich's preparations, notably in female patients; in the male patients it very seldom occurred. The severity of the preparation and the starvation after the injections may be the causes of this headache in the hospital (female) cases.

Vomiting and temperature are at a minimum with pure water; only one rigor occurred in all the injections with pure water. We are convinced that the high percentage of temperatures in kharsivan injections is due entirely to the use of unsatisfactorily distilled water.

Dosage.—The general dosage used was 0·4 gramme kharsivan and 0·45 to 0·6 gramme of billon and neokharsivan. It will be understood that this moderate dosage was employed because we were dealing with new and untried drugs.

In conclusion, it must be noted that these results, although satisfactory, would have been even better if all the water used had been of assured purity. Granted that the distilled water is satisfactory, with a good technique and appropriate dosage we are persuaded that the British and French chemists have overcome the main difficulties and have produced drugs of equal utility to those of our more "cultured" enemy.

We are, Sir, yours faithfully,
CHARLES GIBBS, F.R.C.S. Eng.,
Surgeon to London Lock Hospital
and to Charing Cross Hospital.
MORNA RAWLINS,
House Surgeon to London Lock
Hospital.
May 1st, 1915.

ENTERIC FEVER DUE TO A URINARY CARRIER OF LONG STANDING.

To the Editor of THE LANCET.

SIR,—The following small outbreak of enteric fever, due to a carrier, appears to me to be of sufficient interest to place on record. It occurred last autumn at the Alexandra Palace while that building was being used for the reception of Belgian refugees. Between the commencement of October and the end of November five members of the staff developed this disease. The first to fall ill was a clerk working in the trustees' office, the second was a waiter in the staff dining-room, the third waited on the better-class refugees, the fourth on the general body of refugees, while the fifth and last was the night nurse on duty in the hospital ward where there had been no case of enteric fever for six weeks. These five individuals, consequently, were all working in different parts of the building. They had only one thing in common, and that was the preparation of their food by the cook who was in charge of the staff kitchen. On being questioned this man stated that he had suffered from enteric fever 18 years ago, and was in St. Mary's Hospital for six months. I obtained specimens of his excreta, which were bacteriologically examined for me by Dr. G. E. Cartwright Wood, who reported that the bacillus typhosus was present in the urine but was not found in the fæces. In answer to my inquiries, the man informed me that he had never at any time suffered from pain or discomfort in the region of the bladder, nor from frequency of micturition; nor had he ever noticed anything unusual in the appearance of his urine. I was not able to make any inquiries of previous employers of this man because for the last 16 years he has had no fixed employment, but has moved about the country acting as temporary cook at race meetings, during manœuvres, and at hotels.

The points of interest in this case are: (1) The long duration of infection in a urinary carrier; (2) the complete absence of bladder symptoms. After the cook's departure no further case of enteric occurred among the staff. I might add that there were only six cases of this disease among the 32,000 refugees who passed through the Alexandra Palace.

I am, Sir, yours faithfully,
HERBERT E. CUFF,
Principal Medical Officer of the Metropolitan
Asylums Board.
April 30th, 1915.

THE SCOTOMA OF MIGRAINE.

To the Editor of THE LANCET.

SIR,—Mr. Charles Higgens's observations in THE LANCET of May 1st are of great importance. A simple experiment which proves conclusively that the photo-chemical stimulus is external to the cones may be made as follows. On arising in the morning arrange a mirror so that the sun is reflected from its surface, then whilst one eye is closed and covered with the hand the other eye is opened and closed so that the image of the sun is visible for a fraction of a second; both eyes being now closed and covered with the hands a clear-cut after-image of the sun is seen on a dark background. It will be noticed that there is nothing else visible in the field of vision. If the head be now moved rather sharply to one side the after-image will be drawn out into a long sausage-shaped form with irregular knobs on it. If the head be sharply jerked we can obtain several after-images, plainly showing that the photo-chemical stimulus is movable in the retina and therefore cannot be situated in the cones. I find these experiments succeed best in the morning immediately after sleep, probably because the processes of the pigment cells are retracted. If any reader find that he cannot see any of the subjective phenomena described by me I would suggest that he select one of the most accurate observers of his acquaintance and ask him to repeat the experiment without giving him the least clue as to what he is to see. If he describe the phenomenon as I have described it, it is obvious that we have obtained important confirmatory evidence. I find that whilst many older men fail to see various subjective phenomena they are rarely missed by the young.

I am, Sir, yours faithfully,
London, May 1st, 1915. F. W. EDRIDGE-GREEN.

THE BACTERIAL INFECTIONS OF PROJECTILE WOUNDS.

To the Editor of THE LANCET.

SIR,—In the leading article under the above title in your issue of April 24th, as well as in the illuminating address of Sir Almroth Wright and the "Memorandum on the Treatment of the Bacterial Infections of Projectile Wounds" in the same issue, stress is laid on the importance of free drainage of these wounds and of the necessity of securing "a free outflow of lymph"—and Sir Almroth Wright and the other writers mention the various means adopted to secure these ends. But I see that there is no mention of the use of "Bier's method" of evacuating abscesses and sinuses by means of cupping glasses and other forms of aspiration.

Are there not cases where this method would be useful—especially when two or three days have elapsed after the injury? By suction or aspiration pent-up matter is evacuated and "a free flow of lymph" and an "active hyperæmia" are induced.

I am, Sir, yours faithfully,
Llandrindod Wells, April 29th, 1915. R. ACKERLEY.

THE TREATMENT OF CALLOUS ULCERS.

To the Editor of THE LANCET.

SIR,—Mr. H. Beckwith Whitehouse, in his report on gunshot and shell wounds in THE LANCET of April 24th, speaks of the use of glucose in causing osmosis and promoting rapid healing. Strangely enough, for many years I have used cane sugar in medium-sized crystals to soften callous ulcers on account of the free passage of lymph over the surface of the ulcer when the crystals are dusted over it. This is a wrinkle that I picked up from an old woman who was curing an ulcer on her leg in this manner. How or where she got the idea I never learned, and I never saw anyone but herself use it.

Progressive gangrene with a tough yellow slough continually increasing in depth and thickness may possibly, as far as I know, be found in some wounded in this war. A case that came under my care in civil life caused me great worry and anxiety. All I could do was unavailing, until I allowed steam direct from a kettle-spout to play on the slough; this rendered it friable, and I was able to clear it away down to the raw, living flesh, the blood-vessels and nerves which were dead remaining as strings hanging from the surface. Rapid healing followed the use of antiseptic dressings.

I am, Sir, yours faithfully,

Bradford, Yorks, April 27th, 1915. P. M. O'BRIEN.

TREATMENT OF "INCRUSTED CYSTITIS" BY SUPRAPUBIC DRAIN AND INTRA-VESICAL INJECTION OF LACTIC BACILLUS.

To the Editor of THE LANCET.

SIR,—I agree with Dr. David Newman, in your issue of May 1st, that Dr. Caulk cannot claim priority in regard to the action of the lactic acid bacillus on other infections. I fancy the credit should belong to Metchnikoff, for surely he first demonstrated scientifically the effect of this bacillus on bacilli coli. I have myself for some years used *lactic acid* for infections of the bladder. I first used it in two cases with dense phosphatic incrustations and was delighted with the result. Subsequently I had experiments made as to the bactericidal potency of solutions of different strengths in respect to bacilli coli, and we found that a solution of 1–10 was the minimum strength that was likely to be effectual. I also had tested the solvent power of this acid on vesical calculi. It was found that in the strength of 1–10 it is a weak solvent, but is able to dissolve small phosphatic spicules within a reasonable time and to soften and so assist the disintegration of larger masses. Unfortunately, illness and other circumstances prevented the publication of these observations, but I hope to record them some day.

Meanwhile I would advise the use of a 10 per cent. solution of lactic acid rather than the lactic acid bacillus for two reasons: (1) lactic acid must be in a fairly strong solution if it is to act as a solvent as well as a preventive of phosphatic deposits; (2) the stronger the solution the greater the bactericidal potency. It will be found that lactic acid in the strength recommended causes considerable pain when injected into the bladder, but if a weak solution of novocaine be first injected into the bladder and allowed to remain there for a few minutes the pain is prevented. The solution of lactic acid should be injected into the empty bladder and left there for 15 minutes. It should then be washed out with saline. These procedures should be repeated as often as is considered necessary. In bad cases suprapubic (*not* vaginal) drainage should be employed.

I may add that I have used lactic acid in the same strength for intractable leucorrhœa due to bacillus coli infection. Some years ago I showed that the lactic acid normally found in the vagina is not necessarily produced by the action of Döderlein's bacillus since this acid is present in sterile hæmatocolpos fluid.[1]

I am, Sir, yours faithfully,

Liverpool, May 3rd, 1915. W. BLAIR BELL.

CERTAIN PECULIAR CRYSTALS FOUND IN CEREBRO-SPINAL FLUID.

To the Editor of THE LANCET.

SIR,—I have read with interest the article of Dr. W. W. D. Thomson in THE LANCET of March 27th on the occurrence of peculiar crystals in the cerebro-spinal fluid for the reason that shortly before the outbreak of war I encountered a similar case myself. From the clinical side the case was very obscure. The only outstanding feature was very marked secondary optic atrophy, together with a slight degree of headache. There were no other symptoms of cerebral tumour, and, apart from a slight degree of anæmia, the patient appeared to be in perfect health. The Wassermann reaction was negative. The cerebro-spinal fluid was perfectly clear, under slightly increased pressure, showed no cellular or protein increase, but contained enormous numbers of crystals, which appeared to be identical in appearance with those described and figured by Dr. Thomson. They refused to take up any stain. It was impossible to determine the nature of these crystals until they were put under the polarising microscope, when they were at once seen to be the highly, doubly refracting crystals of a cholesterin ester. No crystals of cholesterin could be seen. The crystals were present in the cerebro-spinal fluid on four separate occasions. If Dr. Thomson should be fortunate enough to come across another case of this description he might find it of interest to examine the fluid with the polarising microscope and compare the crystals with a known specimen of a cholesterin ester.

Mr. Ernest H. Shaw's suggestion that the crystals were deposited from the water used for sterilising the tube appears to me a most extraordinary one, and I am glad to see that Dr. Thomson has completely refuted it.

I am, Sir, yours faithfully,

WILLIAM BOYD,
Lieutenant R.A.M.C.(T.); Professor of Pathology,
University of Winnipeg.

1/3rd North Midland Field Ambulance, British Expeditionary
Force, May 1st, 1915.

THE WAR OFFICE NEED FOR DOCTORS.

To the Editor of THE LANCET.

SIR,—Many of us middle-aged men would be willing to join the Royal Army Medical Corps, but at our age we have a strong objection to being under the orders of a captain aged 28 or so. I know it is impossible for the War Office to explain to each individually as to the nature of the duties expected of us, but it would be very helpful to some of us who are wavering if the authorities were to publish a general description of the kind of man they want, what his duties would be, and what would be the nature of the discipline which he would have to submit to.

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[1] Proceedings of the Royal Society of Medicine (Obstetrical and Gynæcological Section), 1911, vol. iv., p. 234; and Journal of Obstetrics and Gynæcology of the British Empire, 1912, vol. xxi., p. 209, THE LANCET, May 13th, 1911.

I am, Sir, yours faithfully,
"52."

May 1st, 1915.

Obituary.

ALEXANDER MAXWELL ADAMS, F.R.C.S. EDIN., L.R.C.P. EDIN., L.F.P.S. GLASG.,

SURGEON-COLONEL (RETIRED), 3RD AND 4TH BATTALIONS SCOTTISH RIFLES; MEDICAL OFFICER OF HEALTH OF LANARK.

THE death of Surgeon-Colonel Alexander Maxwell Adams took place, after a somewhat long illness, at Friarsfield, Lanark, on April 9th.

Alexander Maxwell Adams, who was the son of Alexander Maxwell Adams, M.D., professor of medicine at Anderson's University, Glasgow, was born at Berwick on March 30th, 1837, and qualified L.F.P.S. Glasg. in 1857. He became L.R.C.P. Edin. in 1860, F.R.C.S. Edin. in 1875, and D.P.H. in 1890. He was Surgeon-Lieutenant-Colonel of the 3rd and 4th Battalions Scottish Rifles and served in the South African campaign. He was medical officer to the Lady Hozier Convalescent Home and the Smyllum Orphanage, surgeon to the Lanark Poorhouse and to the Lockhart Hospital, and medical officer of health of Lanark.

His all-round professional capacity made him an outstanding practitioner in the district in which he lived; he enjoyed for many years one of the largest practices in the neighbourhood, and his kindly manner gained him immediate acceptance among those who called upon him for aid. He was the first medical officer of health of the borough of Lanark, and held the position for 30 years. His term of office was marked by great sanitary reform, and he lived to see a decided improvement in the health of the district occasioned by his exertions. He was a member of the Lanark school board from 1885 to 1903, and served the office of chairman for two periods, from 1889 to 1891 and again from 1894 to 1903.

Dr. Adams leaves a wife and large family to mourn their loss, one son, Dr. D. A. V. Maxwell Adams, at present in the Royal Army Medical Corps, being with the British Expeditionary Force in France.

FREDERICK LAWRANCE, M.R.C.S., L.S.A.

Mr. Frederick Lawrance, who died in his eighty-fifth year on May 1st, was perhaps the oldest practising medical man. The son of the Rev. Robert Lawrance, rector for 21 years at Bleadon, near Weston-super-Mare, he was born at Kington St. Michael, near Chippenham. He received his medical education at St. Bartholomew's Hospital, qualified as M.R.C.S. in 1857 and L.S.A. in 1859, and became a partner of Dr. Loadman, of Hammersmith, going to reside in a house in Chiswick-lane, in which the poet Pope and his parents had at one time lived.

Mr. Lawrance was widely known, and at one time his practice was among all classes. He always enjoyed good health until about a year and a half ago, but he continued to practise almost until the day of his death, attending his last case of midwifery this year. His energy was such that he continued in active practice until he went into a nursing home two months ago for an operation, from which he made a good recovery. Indeed, he insisted upon giving directions about his patients to within three or four days of his death, notwithstanding the impairment of his speech due to the partial hemiplegia of which he had two strokes during the last month.

His activities were numerous and varied. He was chairman of the Conservative Association of Hammersmith, member of the board of management of the West London Hospital, a churchwarden, and was associated with very many local charitable and other institutions. He was also an ex-president, an original member, and one of the most regular attendants of the West London Medico-Chirurgical Society. Mr. Lawrance was initiated into Freemasonry in the Lodge of Harmony, and was a founder member of several Lodges and Chapters. He was a director of ceremonies at the Grand Lodge of England for the year during which King Edward VII., when Prince of Wales, was installed Grand Master. He was fond of all kinds of sport, and of riding and driving, was a good judge of a horse and in his younger days enjoyed fishing, shooting, and hunting. One of the most unselfish of men, he endeared himself to several generations of families that he had attended.

Mr. Lawrance married Miss Matilda Clark, youngest daughter of the late Dr. Clark, of Twickenham, by whom he had one child, a daughter. Both predeceased him by some years.

THE LATE DR. PANTLAND HICK.

A further appreciation has reached us of Dr. Pantland Hick, whose untimely death has left so deep an impression on his friends:—

"Life is short, and the Art long ......" Men must strive to achieve even though they live not to see the fruits of their endeavours and achievements. Thus did Hippocrates in his wisdom inscribe the epitaph of the many physicians, cut off in the vigour of youth, who were to follow him with devotion and faith through the long ages. Pantland Hick was such a man. He was absorbed in his work; he spared neither his energies nor his health. Indeed, he died serving his country with that same unselfishness that he lavished on his friends and patients in their hours of need. In these times memory is short and hopes are high. Men whose death would cause a stir in ordinary times pass almost unnoticed. But to those who knew him Hick will always be a living memory—the memory of a physician whose powers of observation and whose frank and noble disposition would have placed him among the great physicians of the country had he been spared to accomplish in his own modest but unswerving way that to which he had set his hand.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The next quarterly (or general) meeting of this association will take place on Tuesday, May 18th, at 11, Chandos-street, Cavendish-square, London, W., under the presidency of Dr. David G. Thomson, at 3 P.M. On the same day and at the same place will meet: Nominations committee, at 10 A.M.; educational committee, at 11 A.M.; Parliamentary committee, at 12 noon; council, at 1.30 P.M.; and research committee, at 5.15 P.M. Papers will be read by Dr. T. B. Hyslop on Anger, and by Dr. David Orr on Research.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

THE EXECUTIVE COMMITTEE.

A MEETING of the Executive Committee was held on Thursday, April 29th, when good progress was reported. A letter was read from Dr. Pechère, the President of the Aide et Protection aux Médecins et Pharmaciens Belges, to Sir Rickman Godlee, in which the warmest thanks of that body were returned to the Fund for the donation in money which had been forwarded upon the decision of the committee at the previous meeting. To this letter a reply was sent by Sir Rickman Godlee stating the intention of the Fund to continue to help in this way, and asking that details of the distribution should be made known to the committee of the Fund. Sir Rickman Godlee also read a letter from Mr. Herbert Hoover, saying that for the moment it would not be possible to communicate with Belgium or to receive from Belgium the information sought.

A letter was also read from the Under Secretary of State for Foreign Affairs explaining the circumstances in which His Majesty's Government decided that they would not be able to make a monthly contribution out of public funds to the benevolent department of the American Commission for Relief in Belgium. It was decided that a copy of this letter should be sent to the chairman of one of the American Funds having similar objects to those of the British Fund, because the position of the British Government in the matter might be misinterpreted in the United States.

Dr. Des Vœux and Dr. Squire Sprigge said that their experiences were alike at the present moment with regard to finding situations for Belgian doctors in this country. At one time there appeared to be little difficulty in finding the posts, while the applicants were not coming forward. Now there seemed to be many vacant appointments, but for one reason or another the Belgian candidates were not successful in obtaining them.

The treasurer's report showed that money was coming in steadily, though many districts had not yet responded to the invitation to subscribe. Dr. Alfred Cox said that in the forthcoming annual report of the British Medical Association the claims of the Fund would be repeated. It was generally felt by the committee that though the outgoings at the time were not large, the call upon the Fund in the future would be very heavy, and that no pains ought to be spared to augment its resources.

Messrs. Burch, Whitehead, and Davidsons, 29, Spring-gardens, London, S.W., have kindly consented to act as honorary solicitors to the Fund.

THE WEEK'S SUBSCRIPTIONS.

The subscriptions received by Dr. Des Vœux during the week ending Tuesday last make a total of very nearly £2000, but this handsome sum, of course, includes a donation, on account, from the Scottish Committee, Belgian Doctors' and Pharmacists' Relief Fund, of £1000. From the Liverpool Belgian Doctors' Relief Fund there was received £400, the sum being earmarked for the relief of doctors, as a separate fund has been instituted in Liverpool for pharmacists. A further welcome donation of £400 was received through the Australian Agent-General from the Australasian Pharmaceutical Conference.

	£	s.	d.
Mr. F. Godlee	10	0	0
Liverpool Belgian Doctors' Relief Fund (subscribed entirely by Doctors)...	400	0	0
Warrington Division, B.M.A. (per Dr. J. A. Murray, Hon. Sec.) ...	16	0	0
Birmingham Local Committee (per Dr. R. Saundby) (seventeenth donation, total £387 17*s.* 3*d.*)—			
Dr. and Mrs. Stonehewer (proceeds of Whist Party)	10	5	0
Dr. G. D. H. Carpenter	1	0	0
Dr. Barrs (Leeds) collected by—			
Dr. Hawkyard	3	3	0
Mr. F. H. Mayo	2	2	0
Furness Division, B.M.A. (per Drs. Alexander and Thompson, Hon. Secs.)—			
Dr. Cook	2	2	0
Dr. Mallagh	1	1	0
Dr. Fawcett	1	1	0
Dr. Lowther...	1	0	0
Dr. Gwatkin...	1	1	0
Dr. Collins	5	5	0
Dr. Harper	1	1	0
Dr. Daniel	1	1	0
Dr. Livingston	1	1	0
Dr. Wilson	1	1	0
Dr. Bowman...	5	5	0
Dr. Brown	0	10	6
Dr. J. A. Reed	3	3	0
Dr. Carmichael	1	1	0
Dr. Ashburner	3	3	0
Dr. Kendal	0	10	6
Dr. Alexander	1	1	0
Dr. Johnston	1	1	0
Dr. Blacklee	1	1	0
Dr. Cross	1	1	0
Dr. Forster	1	1	0
Dr. Stoney	0	10	0
Dr. Ware	1	1	0
Dr. Menzies...	1	1	0
Dr. Hawkesworth ...	1	1	0
Dr. Sinclair	1	1	0
Dr. Pratt	1	1	0
Dr. Sansom and Dr. Bayne...	2	2	0
Dr. Magill	0	10	0
Dr. Thompson	1	1	0
Scottish Committee Belgian Doctors' and Pharmacists' Relief Fund (per Dr. Norman Walker, Treasurer, Royal College of Physicians of Scotland)	1000	0	0
Dr. G. Lestock Thornton, recruiting fees, &c. (second donation, total £3 3*s.*)	2	2	0
Bucks Division, B.M.A. (per Dr. A. E. Larking)—			
Dr. Johnstone Harris	1	1	0
Dr. Lysander Maybury	1	1	0
East Sussex Medico-Chirurgical Society (per Dr. F. W. S. Culhane, Hon. Treas.)	30	0	0
North of England Branch of Belgian Doctors' and Pharmacists' Relief Fund (per Dr. James Don and Mr. A. S. Perceval, Hon. Secs.), ninth donation, total £349 19*s.*)—			
Dr. T. A. B. Kane ...	3	3	0
Dr. A. Wilkinson ...	1	1	0
Dr. W. J. Baty	3	3	0
Dr. J. R. Burn	1	1	0
Dr. James McConnell.	1	1	0
Australasian Pharmaceutical Conference (per the Agent-General)—			
Victoria	300	0	0
Queensland	65	0	0
Tasmania	35	0	0
Mr. P. L. Ridge	0	5	8
Northants Pharmacists' Association (per Mr. R. H. Robinson)... ...	2	2	0
Mr. T. H. Powell	0	5	0
Wimbledon and District Pharmacists' Association (per Mr. F. T. Bowen)	2	2	0
Mr. J. W. Venters	0	5	0
Mr. F. A. Williamson (proceeds from weighing machine)	0	7	3
Mr. A. Chapman	0	11	7
Mr. R. Fouracre	0	5	0
Dr. A. W. Sanders... ...	1	0	0

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham-gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Ltd.

THE APPEAL FOR SURGICAL INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge the receipt of surgical instruments kindly contributed by the following donors:—

Dr. Flora Butcher, Tanakpur, U.P., India; Dr. J. C. Eames, Stoneclough, Manchester; Dr. W. H. Hargreaves, Dr. R. G. S. Orbell, Dr. J. Whitton, and Dr. Scott (per Mr. W. H. Rose, chairman, Oamaru Hospital, New Zealand).

DONATIONS AND BEQUESTS.—By the will of the late Dr. Arthur Wigelsworth Orwin the Central London Throat Hospital will receive £1000.—The late Alderman John Royle, of Manchester, bequeathed £1000 each to the Ancoats Hospital, Manchester, Henshaw's Blind Asylum, Old Trafford, and the Manchester Royal Infirmary. Subject to certain gifts of shares, the testator left the residue of his property as to three-fifths to the "David Lewis Epileptic Colony," Sandle Bridge, Cheshire, and as to two-fifths as his trustees may see fit among charities mentioned in his will.—King Edward's Hospital Fund will receive £60,000 under the will of the late Mr. Edward Berman, in the event of certain legacies and a life-interest failing.—A sum of £250, part of the fund placed at the disposal of the Queen by the wives of Freemasons, has been given by Her Majesty to pay for the training and expenses of a medical student at the London School of Medicine for Women.—Sir Joseph Jonas, chairman of the Applied Science Committee of the University of Sheffield, has given £5000 to found, endow, and equip a testing laboratory in connexion with the Applied Science Department of the University.

The War.

THE CASUALTY LIST.

THE casualty lists published since our last issue contain the following names of medical officers:—

Killed: Fleet-Surgeon Adrian A. Forrester, R.N.

Wounded: Captain J. L. Duval, Captain R. H. McGibbon (both of 1st Field Ambulance, Canadian Forces), Captain C. A. Wood (attached to 1st Battalion, 4th Gurkha Rifles), I.M.S.; Lieutenant H. S. de Boer, Lieutenant G. L. K. Findlay, Lieutenant J. A. MacMahon (attached to 1st Battalion, Somerset Light Infantry), all of the R.A.M.C.; Major W. M. Mackay, Major F. G. Proudfoot, Captain J. M. Bowie, Captain D. H. Weir, Lieutenant R. E. Barnsley, Lieutenant V. H. Wardle, all of the R.A.M.C. (T.F.).

Missing: Lieutenant C. Stenhouse, R.A.M.C. (T.F.).

THE HONOURS LIST.

The Indian Distinguished Service Medal, in recognition of their gallantry and devotion to duty whilst serving with the Indian Army Corps, British Expeditionary Force, has been conferred on the following native medical officers: First-class Senior Sub-Assistant Surgeon Gaurie Shankar (112th Indian Field Ambulance) and Third-class Sub-Assistant Surgeon Zafar Husain (129th Indian Field Ambulance).

WHAT ANTITYPHOID INOCULATION HAS DONE FOR THE ARMY.

In our parliamentary columns will be found a statement by Mr. Tennant of the number of cases of typhoid fever that have occurred in the Expeditionary Force from the outbreak of the war to the beginning of May, which shows that the case-mortality among those protected was between 6 and 7 per cent., while among those unprotected it amounted to over 20 per cent. We cannot, of course, in the absence of a statement as to what proportion of the entire army was fully protected, what partly protected, and what entirely unprotected, draw indisputable conclusions as to the immunity conferred in regard to case incidence, but seeing that the environment and other modifying conditions, so far as these several classes were concerned, must have been practically identical, it is obvious that the effect on the mortality of the disease was very great indeed. Sir Berkeley Moynihan, speaking recently to a professional audience at Leeds from his own observations at the front, expressed the conviction, based on his own experience, that antityphoid inoculation had clearly reduced the incidence of typhoid fever, mitigated its severity, and, above all, considerably diminished its mortality.

THE GERMAN USE OF ASPHYXIATING GASES.

Under date of May 4th Sir John French has issued the following report on the use of asphyxiating gases in warfare and on deadly and cruel effects upon those exposed to them:—

> The gases employed have been ejected from pipes laid into the trenches, and also produced by the explosion of shells especially manufactured for the purpose. The German troops who attacked under cover of these gases were provided with specially designed respirators, which were issued in sealed pattern covers. This all points to long and methodical preparation on a large scale.
>
> A week before the Germans first used this method they announced in their official communiqué that we were making use of asphyxiating gases. At the time there appeared to be no reason for this astounding falsehood, but now, of course, it is obvious that it was part of the scheme. It is a further proof of the deliberate nature of the introduction by the Germans of a new and illegal weapon, and shows that they recognised its illegality and were anxious to forestall neutral, and possibly domestic, criticism.
>
> Since the enemy first made use of this method of covering his advance with a cloud of poisoned air he has repeated it both in offence and defence whenever the wind has been favourable.
>
> The effect of this poison is not merely disabling or even painlessly fatal, as suggested in the German press. Those of its victims who do not succumb on the field and can be brought into hospital suffer acutely, and in a large proportion of cases die a painful and lingering death. Those who survive are in little better case, as the injury to their lungs appears to be of a permanent character and reduces them to a condition which points to their being invalids for life. These effects must be well known to the German scientists who devised this new weapon and to the military authorities who have sanctioned its use.
>
> I am of the opinion that the enemy has definitely decided to use these gases as a normal procedure and that protests will be useless.

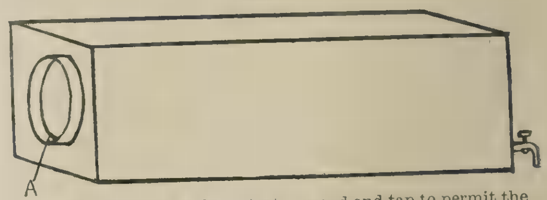
CONTINUOUS BATHS FOR SEPTIC WOUNDS OF THE LEG.

Mr. Malcolm Donaldson, F.R.C.S. Eng., Temporary Lieutenant, R.A.M.C., has sent us the following description of the apparatus which he has designed for the treatment by continuous baths of septic wounds of the leg:—

"In looking through the medical journals for the last few months it at once becomes obvious what a variety of opinion there is concerning the treatment of the intensely septic wounds of the leg which are a feature of the present war. Such controversies tend to show that up to the present no royal road to cure has been found.

The base hospital to which I am attached is the furthest from the front; consequently some of the casualties arrive with wounds in a state of sepsis; therefore it may be of interest to mention the treatment which, in my limited experience, has proved most beneficial, and to describe a leg-bath which can be used with the patient in the horizontal position, without the water finding 'its own level' in the mattress and bedding.

FIG. 1.

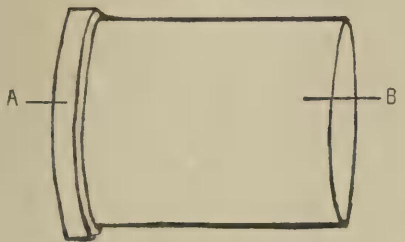


The box bath with collar (A) at one end and tap to permit the flow of water at the other.

It is obviously useless to put a limb in a bath if there is not free drainage. A few hours after the patient is admitted, and when he has recovered from the fatigue of the journey, he is taken to the theatre and the limb thoroughly opened up. Like most people, since the beginning of the war I have been forced to realise more and more that large incisions and multiple counter drains are absolutely essential. A few hours later, when all hæmorrhage has ceased, the limb is put into the bath (described below). At first various antiseptics were tried, but lately, hypertonic solution of salt (from 4 per cent. to 10 per cent.) has been used.

The results of this treatment, especially since the salt solution has been used, are most striking. The limb is left in the bath from 24 to 48 hours, the solution being changed at intervals, and kept at a comfortable temperature. It is then fomented for 12 hours before it is again put in the bath. The relief to the patient is very great, and they often beg to have their legs left in the bath. It is better to increase the strength of the salt slowly, and then the patient does not feel the stinging sensation for more than a few minutes. At the end of 24 hours the leg is often very swollen as the result of the saline, as can be proved by comparing it with other solutions. The patients drink large quantities of fluid during this treatment, and it is found that the discharge from the wound is greatly increased for several hours after removal of the limb from the bath, the sloughs coming away easily.

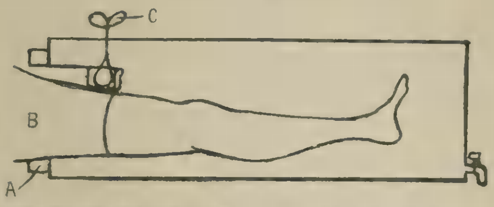
FIG. 2.



The collar A, and rubber sleeve B, through which the limb is passed. The rubber sleeves can be obtained from Messrs. Cow, Cheapside, London.

This bath (Fig. 1) is made of zinc or galvanised iron with the following dimensions: Length, 3 ft.; width, 10 in.; depth, 1 ft.; it has a circular hole at one end 30 in. in circumference. On the outer side is a metal collar or a flange which projects 1½ in. On to this collar a rubber sleeve (Fig. 2) is fitted, the other end of the sleeve being clamped on to the thigh after the leg has been introduced into the bath. (Fig. 3.) There is no need for the rubber to be very much stretched, as the pressure of the water helps to keep it watertight. The dimensions of the rubber sleeve are: length, 12 in.; circumference, 26 in.; with a thick band over one end to fit over the collar.

FIG. 3.



The limb immersed in the bath. The rubber sleeve B, which is attached to the collar A, is drawn taut on the limb by the clamp C, preventing trickling of water from the bath.

I am much indebted to my engineering friend, Mr. H. Wingfield, for helping me to design the bath."

VACANCIES FOR MEDICAL OFFICERS.—We are asked to state that there are still a few vacancies for medical men wishing to take commissions in the 1st London (City of London) Sanitary Company. As the duties of this company consist in organising and supervising the sanitary work of the army at the front and at home, it is desirable that applicants for commissions in this company should have a knowledge of sanitation. The posts are especially suitable for men in the Public Health or Education Service who can be released by their councils for military work. Those joining at once may expect to be ordered abroad at an early date. Applications for commissions should be made to the Officer Commanding, 1st London (City of London) Sanitary Company, Room B 6, Duke of York's Headquarters, Chelsea, S.W.

MEDICAL RELIEF FOR SERBIA.—The second hospital which was being despatched to Serbia by the British Farmers' Red Cross Fund to combat the spread of typhus fever, as well as the Serbian unit of the Scottish Women's Hospitals, has been temporarily detained at Malta on the requisition of the Governor, its services there being urgently required.

The Wounded Allies Relief Committee have appointed Dr. R. Fleming Jones as head of their Serbian typhus hospital at Kragujevac, where during the month of March there were over a thousand cases of recurrent or enteric typhus. Dr. Jones has had exceptional experience in this kind of work, not only in the Spanish-American War, but also in New Guinea where for the past three years he has been chief medical officer. The Wounded Allies Relief Committee's No. 2 Home for Disabled Belgian Soldiers, 45, Courtfield-gardens, Kensington, which accommodates about 50 men, will be formally opened at 4 P.M. on Monday, May 10th, by Her Imperial Highness Princess Napoleon (Princess Clementine of Belgium).

THE CARE OF THE WOUNDED IN IRELAND.—The hospital ship *Oxfordshire* arrived in Dublin from France on Friday, April 30th, with 13 officers and 826 men wounded in the fighting round Ypres. Of these rather less than half were distributed among the Dublin hospitals, the remainder being sent some to Belfast, some to Cork, and some to various other centres. The patients were for the most part not so gravely wounded as the last party that arrived in Dublin. Those despatched to Belfast travelled by the Great Northern Railway Company's hospital train and were distributed as follows: 22 were sent to the Royal Victoria Hospital (of whom 20 were severe stretcher-cases), 24 were sent to the Mater Infirmorum Hospital, 22 to the Samaritan Hospital, and 53 to the Ulster Volunteer Force Hospital. Of the remainder, 25 were sent to the Waveney Hospital, Ballymena, and 6 to Dumbarton House, Gilford, where a hospital has been established, under the auspices of the Ulster Volunteer Force. Complete arrangements have been made for the reception, comfort, transport, and treatment of the wounded soldiers. On May 1st another draft of 126 sick and wounded soldiers were sent from Dublin (where they disembarked) to the north of Ireland, and were divided among the above hospitals, as well as the county infirmaries at Omagh and Londonderry and at Downpatrick.

ST. MARYLEBONE WAR HOSPITAL SUPPLY DEPÔT.—This depôt, to the establishment of which through the generosity of Mr. James Boyton, M.P., brief reference was made in our issue of May 1st, is now open to inspection at 32, Queen Anne-street, Cavendish-square, W., between 10 A.M. and 6 P.M. It contains rooms allotted severally to the following purposes: Bandages, surgical dressings, splints, pine dressings, needlework, slippers, linen, stock and sorting, and carpenter's work. All the articles are sent out in response to a direct appeal from some hospital abroad that is urgently in need. The weekly subscription of 1*s.* each contributed by all the voluntary workers covers the running expenses, so that the whole of any donation received passes direct to the purchase of material required for making supplies. Donations of money, also of blankets, socks, rubber hot-water bottles, and old linen, will be gratefully received by the hon. sec., Mr. F. A. Juler, at the above address.

WAR EMERGENCY COURSES FOR CIVIL PRACTITIONERS.—A Glasgow correspondent, who signs himself "Emergency," writes as follows: "In THE LANCET of March 27th and April 3rd there are paragraphs to the effect that the Russian and Italian Governments have requested the medical authorities to give to senior students and practitioners short courses in practical emergency surgery and field hygiene. Is anything being done in this country in this direction? Many civil practitioners will feel uncertain of themselves when faced with work they are unaccustomed to. A short course in the essentials of these subjects would dispel this uncertainty and immensely increase the efficiency and usefulness of these practitioners."

"Flag Day" in Belfast.—The Belfast Rotary Club is to be congratulated on the phenomenal success of an undertaking originated by them, the object of which was to aid Belfast's wounded sailors and soldiers. All over the city on April 30th ladies were active in selling flags of the Allies in the present war—English, French, Russian, Japanese, Belgian, and Serbian. The nominal price of each flag was 1*d.*, but as much as £5 were cheerfully paid. As a result the sum of £2667 2*s.* will be available, and it is to be distributed through "The Soldiers' and Sailors' Help Society." Over £90,000 have already been subscribed in Belfast to special funds in connexion with the war, a sum far beyond that contributed in any other city (or two cities) in Ireland.

A Handbook for War Time.—A useful reference book, with the title "All Can Help" and the subtitle of "A Handbook for War Time," has been issued by the Duty and Discipline Movement of 117, Victoria-street, London, S.W., at the price of 6*d.* It was first published in November, 1914, and revised and reprinted in March of this year. Its 95 pages contain a quantity of useful information such as How to Join the Forces, Pay, Separation Allowance, Territorial Forces, Reserve and Volunteer or Voluntary Corps, and a long list of naval, military, and social help agencies and societies, divided into sections of (1) For Sailors and Soldiers of the Allied Nations; (2) Funds for Relief of Civilians suffering through War; (3) Funds and Agencies for Helping Distressed Foreigners. In this last section is included the Belgian Doctors' and Pharmacists' Relief Fund (where, it may be pointed out, the chairman is incorrectly described). There are also special chapters treating generally of the Family in War Time and the War and the Sentimentalists. Another edition would, in our opinion, be improved by a short alphabetical index of the whole contents, although some sections are more or less alphabetical in themselves.

Newcastle Surgical Aid Society.—The annual meeting of the Arnison Surgical Aid Society was held at the Royal Infirmary, Newcastle, on April 29th, when the report showed that during the year 1914 assistance had been given to 171 applicants. The amount paid for appliances was £260, towards which the patients had contributed £125. The working men of Newcastle had collected £70. Although the number of appliances supplied to poor people had not been so great in recent as in past years, owing to the work of the Insurance Committee and a School Teachers Fund for supplying spectacles to school children, it was pointed out in the course of the proceedings that during and after the war a large number of soldiers and sailors would apply to the society for aid. For this reason an earnest appeal was made for increased subscriptions.

"Tucked Sheets" for Hospital Use.—If a sheet is turned it is obvious that it will transfer to the bedding what it should carry to the wash to be removed. Mr. D. H. Shuttleworth-Brown, of Wimbledon, has devised a "tucked sheet," the tuck serving to obviate the possibility of a sheet becoming accidentally turned, and we are informed that its adoption at the King George Hospital and by the Red Cross Society is being supported by high surgical authority.

Flies in Warfare.—Professor R. Newstead, of the Liverpool School of Tropical Medicine, has been commissioned by the War Office to prosecute entomological investigations in France from the standpoint of military sanitation. He accordingly left for France on April 27th.

An Athletic Ground for the Royal Naval Division.—Football and sports grounds at the Crystal Palace have been allocated by the naval authorities for the use of the Royal Naval Division, and the equipment will be undertaken by the Young Men's Christian Association.

The Beaufort War Hospital.—The Bristol Lunatic Asylum at Fishponds is to be used for the reception of wounded soldiers. It will provide 1040 beds, and is to be called the Beaufort War Hospital.

A Munificent Benefactor.—It was reported at the annual meeting of the Nottingham Hospital on April 28th that the contributions of the late Sir Charles Seely to that institution had exceeded £100,000 in the last 20 years.

Medical News.

Examining Board in England by the Royal Colleges of Physicians of London and Surgeons of England.—At the Final Examination of the Conjoint Examining Board, held from April 6th to 22nd, the following candidates were approved in the under-mentioned subjects:—

Medicine.—A. C. Ainsley, Cambridge and London; D. W. J. Andrews, Middlesex; T. Anwyl-Davies, St. Thomas's; C. Backus, St. Mary's; C. W. W. Baxter, Guy's; M. Bayumi, Cairo and London; W. K. Bigger, Cambridge and St. Thomas's; S. C. Biswas, Calcutta and St. Mary's; C. V. Boland, St. Bartholomew's; J. P. Bracken, University College; H. F. Brice-Smith, Cambridge and Middlesex; A. D. Brooks, Royal Free; C. M. Brophy, University College; J. K. J. Chambry, Amsterdam and St. Mary's; F. B. Chavasse, Oxford and Liverpool; J. E. Clark, Guy's; M. C. Clark, Royal Free; E. C. Cline and R. Curle, Guy's; R. M. Dannatt, St. Bartholomew's; E. I. Davies, Cardiff and Charing Cross; L. ap I. Davies, University College; T. H. Edey and C. H. Edwards, Guy's; M. Fahmy, Cairo and London; N. Fahmy, Cairo and King's College; R. C. Fairbairn, Oxford and St. Bartholomew's; A. M. C. Forster, Royal Free; S. C. Ghose, Calcutta and St. Mary's; O. Gleeson, Westminster; B. H. Greensill, Birmingham; W. T. Gwynne-Jones, London; G. Habgood, Cambridge and London; G. H. Haines, University College; S. A. Hall and C. E. Harrison, Middlesex; H. S. Hensman, Madras and London; W. Hillbrook, Cambridge and St. George's; R. W. Hodgson-Jones, Manchester; R. A. Holmes, Guy's; G. J. P. Huddleston, Birmingham and University College; S. Hutchinson, University College; S. W. Isaacs, St. Bartholomew's; G. M. Jackson, Bristol; V. C. James, Middlesex; H. C. Jennings, St. Thomas's; R. B. John, Cardiff and Westminster; D. R. Jones, Guy's; D. P. Karaka, Bombay and London; C. H. Keay, Durham; N. E. Kendall, Guy's; J. S. Kennedy, Cambridge and St. George's; R. D. Langdale-Kelham, University College; E. E. D. Lau, Durham; C. G. Learoyd, St. Thomas's; J. S. Leslie, London; P. K. Liang, Cambridge and London; G. S. B. Long, Guy's; M. L. Loveless and W. B. Loveless, Middlesex; H. J. McCurrich, Bristol and St. Bartholomew's; A. J. V. McDonnell, London; A. McInnis, Toronto and London; W. G. McKenzie, Bristol; J. E. C. Maguire, St. Bartholomew's; G. Mallya, Madras and St. Bartholomew's; A. H. Manfield, London; C. J. Marshall, Charing Cross; R. G. Michelmore, London; D. C. Ogilvie, Middlesex; W. L. Partridge, Guy's; S. V. P. Pill, St. Mary's; C. L. G. Powell, St. Thomas's; R. A. W. Procter, Cambridge and St. Thomas's; A. L. Punch, Guy's; R. W. Rammell and C. R. Reckitt, London; A. E. Richmond, St. Thomas's; E. S. Rowbotham, Charing Cross; J. T. Samuel, University College; C. H. Savory, Cambridge and St. Bartholomew's; H. M. Scarborough, Royal Free; E. H. S. Scarr, Manchester; N. A. Scott, St. Bartholomew's; J. M. Shah, Bombay and St. Bartholomew's; T. W. Sheldon, Cambridge and Guy's; S. Simons, Cardiff and St. Mary's; T. H. Somervell, Cambridge and University College; H. G. Sparrow, St. George's and Durham; G. S. Stathers, Cambridge and St. Bartholomew's; R. G. Sterling, London; J. G. Stevens and A. H. Taymour, Guy's; R. C. Thomas, Cardiff and Westminster; A. P. Thomson, Birmingham; J. R. Tibbles, Aberdeen and London; E. Underhill, Birmingham; J. E. A. Underwood, University College; S. K. Vaidya, London; H. C. Viehoff, Liverpool; T. T. B. Watson, London; E. S. White, Bristol; C. M. Williams, Cardiff and St. Mary's; and G. R. C. Wilson, St. Thomas's.

Surgery.—A. C. Ainsley and C. G. Ainsworth, Cambridge and London; D. R. Alexander, St. Mary's, W. G. E. Allen, St. Bartholomew's; D. W. J. Andrews, Middlesex; F. L. Apperly, Oxford and Dublin; J. H. Bayley, London; C. M. Brophy, University College; J. B. Cavenagh, Oxford and St. Thomas's; J. K. J. Chambry, Amsterdam and St. Mary's; F. B. Chavasse, Oxford and Liverpool; P. Cheal, London; Y. J. Cieh, St. Thomas's; V. M. Coates, Cambridge and Bristol; H. M. Collins, London; W. L. Cox, Middlesex; R. Curle, Guy's; E. I. Davies, Cardiff and Charing Cross; J. K. Davies, St. Bartholomew's; W. A. Easton and C. H. Edwards, Guy's; H. H. L. Ellison, St. Bartholomew's; I. Feldman, jun., London; I. Feldman, sen., London; F. J. Folinsbee, Western University; A. M. C. Forster and C. I. Fox, Royal Free; G. C. Gell, Middlesex; C. C. G. Gibson, Guy's; B. Graves, Charing Cross; G. D. Gripper and H. S. Groves, Guy's; G. Habgood, Cambridge and London; S. A. Hall, Middlesex; R. Hargreaves, University College; R. C. Hewitt, Cambridge and St. Thomas's; R. A. Holmes, Guy's; H. R. W. Husbands and G. M. Jackson, Bristol; L. G. Jacob, Cambridge and London; R. B. John, Cardiff and Westminster; C. H. Keay, Durham; N. E. Kendall, Guy's; J. B. Leather, Cambridge and Birmingham; S. J. L. Lindeman, St. Bartholomew's; H. J. McCurrich, Bristol and St. Bartholomew's; A. J. V. McDonnell, London; J. B. McFarland, St. Bartholomew's; S. Mallinick, Halle and London; C. J. Marshall, Charing Cross; R. P. S. Mason, Middlesex; B. Mitra, Calcutta and Guy's; A. H. Morley and C. G. T. Mosse, London; N. F Norman, St. Bartholomew's; D. C. Ogilvie, Middlesex; T. Owen, Cambridge and St. Bartholomew's; C. F. O. Pandithesekere, Ceylon and Middlesex; O. Parry-Jones, London; E. W. Paul, Calcutta and Royal Free; E. C. Peers, Guy's; W. S. J. Peiris, Ceylon and London; L. D. Phillips, University College; H. D. Pickles, Leeds; R. F. Pinson, Birmingham; G. W. Pool, C. L. G. Powell, and T. L. Price, St. Thomas's; D. O. Richards, Guy's; A. E. Richmond, St. Thomas's; R. M. Riggall, Manchester; A. I. Rihan, St. Bartholomew's; G. W. R. Rudkin, University College; S. K. Sanyal, London; F. J. P. Saunders, Cambridge and St. Thomas's; C. H. Savory, Cambridge and St. Bartholomew's; H. M. Scarborough and E. A. Shaw, Royal Free; J. G. B. Smith, St. Bartholomew's; J. A. B. Snell, Cambridge and University College; T. H. Somervell, University College; H. G. Sparrow, St. George's and Durham; G. S. Stathers, Cambridge and St. Bartholomew's; R. G. Sterling, London; D. P. Thomas, St. Bartholomew's; D. C. Thomas, St. Thomas's; R. C. Thomas, Cardiff and Westminster; H. Q. F. Thompson, Guy's; R. R. Thomson, London; A. P. Thomson, Birmingham; J. R. Tibbles, Aberdeen and London; E. J. Tyrrell, Durham; J. E. A. Underwood, University College; W. E. Wade, Charing Cross; P. Wallice, Cambridge and London; M. J. T. Wallis, Guy's; A. H. Warde, St. Thomas's; A. R. S. Warden, Cambridge and St. Thomas's; K. J. F. Westman, Guy's; E. S. White, Bristol; B. Whitehead, St. Bartholomew's; H. A. B. Whitelocke, Oxford and King's College; G. L. Wilkinson, Birmingham; J. D. Wilkinson, St. Thomas's; C. M. Williams, Cardiff and St. Mary's; W. B. Wilson, St. Bartholomew's; G. W. Woodhouse, St. Thomas's.

Midwifery.—A. Z. Abushady, Cairo and St. George's; J. S. Alexander, University College; W. G. E. Allen, St. Bartholomew's; H. K. Alton, Royal Free; P. W. L. Andrew, Middlesex; J. Aydon, Cambridge and St. Bartholomew's; R. T. Bailey, Charing Cross; G. C. G. Baldini, St. Bartholomew's; E. G. Barker, St. Mary's; J. V. Bates, Cambridge and University College; K. L. Bates, Guy's; J. J. O. Beven, Cambridge and Middlesex; K. S. Bhat, Madras and St. Bartholomew's; E. Biddle, Cardiff and Guy's; J. A. Binning, University College; D. A. Blount, St. Bartholomew's; H. F. Brice-Smith, Cambridge and Middlesex; J. Brooks, Manchester; C. M. Brophy, University College; I. F. Buckle, Royal Free; A. S. Carter, Middlesex; L. A. Celestin, University College; M. Chadwick, Cambridge and Guy's; F. B. Chavasse, Oxford and Liverpool; G. E. Chissell, Middlesex; H. M. Cohen, Manchester; S. J. Cowell, Cambridge and University College; E. S. Cuthbert, St. Bartholomew's; E. I. Davies, Cardiff and Charing Cross; R. O. Eades, University College; N. G. El-Gawly, Cairo and St. Bartholomew's; H. Ellis, St. George's; W. J. Evans, Cardiff and University College; R. C. Fairbairn, Oxford and St. Bartholomew's; R. K. Ford, London; A. M. C. Forster, Royal Free; H. Gardiner-Hill, Cambridge and St. Thomas's; P. C. Gibson, London; G. T. Gimlette, St. Thomas's; O. Gleeson, Westminster; E. A. Green and F. H. S. Greenish, Cambridge and London; G. H. Haines, University College; H. W. Hales, Cambridge and St. Bartholomew's; R. C. Hewitt, Cambridge and St. Thomas's; R. B. Hick, St. Mary's; F. E. Higgins, Cambridge and St. Thomas's; N. H. Hill, St. Bartholomew's; R. W. Hodgson-Jones, Manchester; L. S. Holmwood, Cambridge and Middlesex; H. L. G. Hughes, University College; S. C. W. Iredale, St. Bartholomew's; G. M. Jackson, Bristol; L. G. Jacob, Cambridge and London; V. C. James, Middlesex; H. C. Jennings, St. Thomas's; R. B. John, Cardiff and Westminster; L. P. Johns, King's College; C. S. J. Kearney, St. Bartholomew's; C. H. Keay, Durham; F. A. Knott, Guy's; R. D. Langdale-Kelham, University College; M. E. A. Latif, Cairo and Middlesex; E. E. D. Lau, Durham; J. B. Leather, Cambridge and Birmingham; J. C. Lee, McGill; S. J. L. Lindeman, St. Bartholomew's; G. C. Linder, St. Bartholomew's; E. M. Litchfield, New Zealand and Guy's; V. E. Lloyd, Guy's; M. L. Loveless and W. B. Loveless, Middlesex; H. J. McCurrich, Bristol and St. Bartholomew's; W. G. McKenzie, Bristol; S. A. S. Malkin, University College; C. J. Marshall and G. S. Marshall, Charing Cross; B. R. L. Mayman, King's College; F. Mohamed, Cairo and Westminster; F. Molina, St. Thomas's; A. H. Morley, London; I. Mortada, Cambridge and University College; J. K. Muir, Middlesex; N. S. Nairne, St. Thomas's; F. W. Noble, Aberdeen and Middlesex; H. M. Oddy, Oxford and St. Thomas's; T. Owen, Cambridge and St. Bartholomew's; L. G. Phillips, Middlesex; H. D. Pickles, Leeds; R. F. Pinson, Birmingham; A. E. A. Poulier, Ceylon and Middlesex; E. A. Prichard-Evans, Middlesex; R. A. W. Procter, Cambridge and St. Thomas's; J. N. Puri, London; K. N. Purkis, Guy's; G. J. Randell, Cardiff and Westminster; H. Ratnarajah, Ceylon and St. Mary's; T. H. Rhys, Cardiff and Charing Cross; E. D. Richardson, Charing Cross; R. L. Robinson, University College; L. C. S. Roche, St. Thomas's; S. K. Sanyal, London; F. J. P. Saunders, Cambridge and St. Thomas's; C. H. Savory, Cambridge and St. Bartholomew's; N. A. Scott, St. Bartholomew's; W. W. S. Sharpe, St. Mary's; E. G. Sherwood, Royal Free; R. Sinha, Punjab and London; T. H. Somervell, Cambridge and University College; H. G. Sparrow, St. George's and Durham; G. S. Stathers, St. Bartholomew's; R. Stowers, University College; R. F. Sturridge, Middlesex; T. C. Summers, London; T. J. Taunton, St. Bartholomew's; R. R. H. O. Tha, Cambridge and University College; J. W. T. Thomas, Cardiff and Middlesex; W. L. Thomas, Middlesex; R. R. Thompson, London; I. S. Tirard, Cambridge and King's College; R. S. Topham, Leeds; E. J. Tyrrell, Durham; E. Underhill, Birmingham; H. J. Wallace, University College; H. J. Wallace, Royal Free; A. A. Watkinson, Charing Cross; J. W. Wayte, St. Thomas's; E. S. White, Bristol: E. M. White, Royal Free; W. R. White-Cooper, St. Bartholomew's; H. Whyte, London; N. J. Wigram, Sheffield; C. M. Williams, Cardiff and St. Mary's; G. R. C. Wilson, St. Thomas's; and G. C. N. Younger, Middlesex.

VICTORIA UNIVERSITY OF MANCHESTER.—At the Final M.B. and Ch.B. examination, held recently, the following candidates were successful:—

J. C. Bramwell and J. E. Brooks.

Obstetrics and Surgery.—S. G. J. Dowling.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST.—The sixty-seventh annual report of this institution shows a reduced income and a larger expenditure for the year 1914 as a result of the war. Fortunately, however, substantial legacies have been received by the hospital during the past two years. For the year under notice 162 beds were in daily occupation, the average length of stay of each patient being nearly ten weeks. The number of new cases registered in the out-patient department was 7473, the total number of attendances being 31,193. With the report is included the reproduction of a scroll commemorative of the foundation-stone laying, a coloured picture of the grounds of the hospital, and illustrations of different departments of the institution.

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the committee 39 cases were considered and grants amounting to £365 10*s.* were voted to 35 of the applicants. The following is a summary of the cases relieved:—

Daughter, aged 59, of M.R.C.S. Eng. who practised at Long Sutton. Had worked as governess and housekeeper for many years, but owing to recent death of employer is now out of employment. Only income an investment bringing in £5 per annum, and age against obtaining fresh situation. Voted £12 in 12 instalments.—Daughter, aged 45, of M.R.C.S. who practised at Burgh le Marsh. Lives with mother who has only a very small income. Applicant earned living as a teacher of music until the war commenced, but practically all her pupils have now given up. Voted £10, and referred to the Professional Classes War Relief Council.—Widow, aged 40, of M.B., Ch.M. Aberd. who died in 1914 and who practised at Manchester. Applicant left with seven children, ages 3 to 14 years, one son suffering from spinal disease. Only income a little from the sale of the practice. Requires help for the education of the children. Voted £5 and referred to the Guild.—Daughter, aged 57, of M.D. who practised at Kirkdale. Had earned a living at dressmaking until health became bad. Rent is paid by friends, but no income at present. Voted £12 in 12 instalments.—Widow, aged 44, of M.B., C.M. Glasg. who practised at Lenton and died in 1914 after a long illness, and was unable to provide for his widow. Earns a little, a collector for a society, but not sufficient to keep her. Two children, 10 and 12. Voted £10 in two instalments.—Wife, aged 53, of M.R.C.S. Eng. who practised at Retford, but is now totally incapacitated from work and is in a home. One son, who is being educated by a relative. Only certain income £8 per annum. Voted £5, with leave to apply again and referred to the Guild for report.—Daughter, aged 68, of L.S.A. who practised at Christchurch. Has earned a living as an artist, but owing to failing eyesight unable to follow her profession and sell the few pictures she has on hand. Voted £18 in 12 instalments.—Widow, aged 42, of L.S.A. who died this year and had practised at Padstow. Husband was ill with general paralysis for four years before death. Has tried to keep her home together for some time by taking in boarders, but has had none since the war commenced. One daughter, who is being educated at St. Ann's School. Voted £10.—Daughter, aged 33, of M.R.C.S. Eng. who practised at Whitechapel. Lives with mother, who has an Epsom pension. Applicant worked in one situation for many years, but has been discharged owing to war. Wants help to be trained as midwife. Training to be provided free, but outfit required. Appointment promised at end of training. Voted £12 through the Guild.—Daughter, aged 60, of M.R.C.S. Eng. who practised at Leeds. Applicant lives with her mother, who is a confirmed invalid. Lost all her capital in the Franklin frauds. Only income about £6 10*s.* per annum, and help from the Guild and the Fund. Previous help three times, £36. Voted £12 in 12 instalments.—Daughter, aged 53, of M.R.C.S. Eng. who practised at Rickmansworth. Suffering from arthritis and fibrosis. Only income £39 per annum from a relative. Quite unable to work. Relieved twice, £20. Voted £10 in two instalments.—Daughter, aged 58, of M.R.C.S. Eng. who practised at Peckham. Health very bad indeed. Only income £19 per annum from a sister. Relieved 17 times, £197. Voted £12 in 12 instalments.—Widow, aged 59, of M.R.C.S. Eng. who practised at Maida Vale. Was left entirely without means and suffering from chronic rheumatism and weak heart. Relieved 12 times, £118. Voted £15 in 12 instalments.—Daughter, aged 68, of M.R.C.S. Eng. who practised at Cranbrook. Very delicate and requires someone to look after her. Has an annuity from another benevolent fund, but not sufficient to maintain herself. Relieved 16 times, £168. Voted £12 in 12 instalments.—Widow, aged 45, of M.B., C.M. Edin. who practised at Ballindallock. Left totally unprovided for at husband's death in 1910. Has four children, three of whom are at school. Tries to earn a little by letting rooms, but has been unsuccessful lately. Relieved four times, £40. Voted £10 in two instalments.—Widow, aged 67, of M.R.C.S. Eng. who practised at Sheffield. Has made a little by teaching German in private schools, but cannot obtain any work at present. Has an Epsom pension. Relieved 15 times, £112. Voted £10 in two instalments.—Daughter, aged 59, of M.R.C.S. Eng. who practised at Blackheath. Has suffered since childhood with a nervous complaint, and never been able to work. Her sister helps as much as possible. Relieved 10 times, £91. Voted £10 in two instalments.—Widow, aged 84, of M.R.C.S. Eng. who practised at Great Marlow. Has three daughters, two of whom, along with one son, are deaf and dumb. None are able to earn much, and all live at home. Relieved 12 times, £80. Voted £18 in 12 instalments.—Widow, aged 60, of M.R.C.S. Eng. who practised at North Shields. Has five sons, three of whom have joined the army; consequently her income is very much reduced. One son too ill to work and the other abroad unable to help. Relieved once, £5. Voted £15, and advised to apply to the National Relief Fund.—M.D. of Dublin, aged 81, single, who practised in Lancashire. Old age prevents him from following his professional work. Has an Epsom pension. Relieved once, £18. Voted £18 in 12 instalments.—M.R.C.S. Eng., aged 77, a widower, who practised at Rainham. Gets a little locum work occasionally, but health and age will not allow him to do much. Relieved once, £18. Voted £18 in 12 instalments.—Widow, aged 60, of L.F.P.S. Glasg. who practised at Rothesay. Endeavours to obtain a living by letting rooms, but at present has none let. Suffers from rheumatism. Has a pension of £12. Relieved once, £12. Voted £12 in 12 instalments.—Daughter, aged 74, of M.D. who practised at Leominster. Has no income and is an inmate of a home for incurables. Requires a little help for clothes and a few necessary comforts. Was an annuitant of the Fund until she went into the home. Relieved 17 times, £209. Voted £6 in 12 instalments.—Widow, aged 56, of L.R.C.P. Edin. who practised at Blackburn. Earns a little by the day nursing children; health not good. Has one daughter who is now beginning to earn a little as a shop assistant. Relieved once, £12. Voted £12 in 12 instalments.—Daughter, aged 60, of M.D. Edin. who practised in London. Suffering from varicose veins and only able to earn very little by sewing. Lives with a sister who has also been helped by the Fund. Relieved nine times, £50. Voted £12 in 12 instalments.—Widow, aged 64, of M.R.C.S. Eng. who practised at Streatham. Only income £40 per annum; has an invalid daughter and other children unable to help. Too old and not strong enough to work. Relieved once, £12. Voted £12 in 12 instalments.—Daughter, aged 53, of M.R.C.S. Eng. who practised at Newport, Mon.

Applicant is blind, and recently has had an internal operation. Income only a few pounds a year from other charities. Relieved four times, £48. Voted £12 in 12 instalments.—Widow, aged 52, of M.B. Aberd. who practised in Warwickshire and Australia. Has been confined to her bed with severe illness for some months. Children only able to help very slightly; also obtains a little help from sister, but not sufficient to provide necessities. Relieved seven times, £73. Voted £12 in 12 instalments.—Widow, aged 75, of L.R.C.P. Edin. who practised at Birmingham. Has recently met with an accident, and has had to obtain help in the home. Has eight children, two of whom live at home but only able to contribute 10*s.* each week, and the other children married, and only able to give very little. Relieved three times, £30. Voted £18 in 12 instalments.—Emergency grants amounting to £15 10*s.* were also given to six applicants, and their cases were deferred for future consideration.—Four vacancies of £20 each among the annuities were also filled at this meeting.

The grants detailed above involve the Fund in an expenditure of £365 10*s.*, to meet which there is only an available balance of £49. The claims on the Fund arising out of the war are increasing month by month, but the resources show a decrease. Immediate support is essential unless the reserves are to be seriously depleted. Subscriptions may be sent to the honorary treasurer, Dr. Samuel West, 11, Chandos-street, Cavendish-square, London, W.

USE OF PRESERVATIVES IN CREAM: APPEAL TO THE LOCAL GOVERNMENT BOARD.—With the view of putting pressure on the Local Government Board to secure the appointment of the long-promised Departmental Committee to consider the question of a standard quantity of preservative to be used in cream, the coöperation of Mr. Mead, the Marlborough-street police-court magistrate, has been secured by Mr. F. W. Beck, who represented the defendants at the hearing of summonses against two dairymen at the court recently. Proceedings were instituted by the Westminster City Council against Champion's Dairy, Limited, for having on March 1st sold preserved cream mixed with a preparation of boric acid equivalent to 0·42 per cent.—i.e., 29 grains per pound of crystallised boric acid, so as to render it injurious to health; and against David John Morgan, trading as J. Morgan and Son, for having on Feb. 17th sold preserved cream mixed with 0·40 per cent. by weight of boric acid (H_3BO_3) equivalent to 28 grains of boric acid per pound of cream, so as to render it injurious to health. Mr. Rotten represented the council. Mr. Beck, on the case of Champion's Dairy being called, said the magistrate would remember that these summonses had been adjourned in order that he might communicate with the Local Government Board his worship's intention to proceed that day with the hearing. He had communicated with the Local Government Board accordingly, and had received a reply that it was contrary to their practice to intervene in cases which were the subject of proceedings, at the same time referring him to a reply by the President to a question in the House of Commons in which he said that in consequence of the war it had been impossible to proceed with the appointment of the promised Departmental Committee, that there was difference of opinion as to the use of preservatives, but that it was inadvisable under present circumstances for authorities to institute proceedings. In view of that answer he suggested that Mr. Mead should adjourn the summonses *sine die*, thus following the course pursued by his colleagues in other metropolitan courts. In support also of his proposal he mentioned that 17 summonses issued against other defendants by the Westminster City Council had already been adjourned with the consent of Mr. Rotten. Mr. Mead decided to adjourn the summonses for two months, and in the meantime to intimate to the President of the Local Government Board that he considered it most urgent that the Board should fix a standard as speedily as possible, as not only the authorities and the trade but also the magistrates experienced great difficulty in dealing with the matter.

MEDICAL SOCIETY OF LONDON.—The general meeting for the election of officers and council will take place on Monday next, May 10th, at 8 P.M. Mr. D'Arcy Power will give a short demonstration, illustrated by the epidiascope, on Early Books on Naval and Military Surgery from the society's library. After the meeting a selection of some of the society's old and rare medical works will be on exhibition. Owing to the absence of Sir William Osler on military service the annual oration and conversazione fixed for May 17th will not take place.

POOR-LAW MEDICAL OFFICERS' ASSOCIATION.—A council meeting was held on April 27th, Surgeon-General G. J. H. Evatt, the President, being in the chair. Dr. Major Greenwood, honorary secretary, reported the action taken on the attempt of the Paddington guardians to appoint, subject to a determination of office at three months' notice, a district medical officer residing in the district. A letter was addressed to the Local Government Board in November drawing attention to this as an infringement of the Medical Appointments Order (the reason given by the board being their desire, at an opportune time in the future, to organise their medical relief after the manner of the Bermondsey guardians), and urging the Local Government Board to refuse consent, unless a proper scheme were laid before them. The Local Government Board had finally given consent to the appointment of a district medical officer, but only for a limited period. If at the end of the time the guardians had no scheme ready they would be required to appoint a medical officer in accordance with the Medical Appointments Order. Had the Paddington guardians been permitted to appoint a medical officer for an indefinite time, subject to a three months' notice, the security of tenure of all district medical officers would have been seriously threatened. The honorary secretary was directed to watch carefully any further developments in the Paddington union. A letter was read from Dr. E. R. Fothergill *re* the Federation of Medical Societies with the British Medical Association. It was unanimously agreed that some kind of federation was desirable, but that any concrete scheme must be examined very closely. Independence was needful for the Poor-law Medical Officers' Association, and hitherto they had endeavoured to work as much as possible in conjunction with the Public Health and Poor-law Committee of the British Medical Association. The financial bearing also was important, as present subscriptions were really inadequate for their present work. Letters were then considered from Dr. A. Drury (Halifax) dealing with important Poor-law questions: (1) As to the right of a lady visitor to order the attendance of a medical officer; (2) whether it was part of the duty of a medical officer to diagnose refraction and prescribe spectacles; (3) whether a lady visitor could demand a report on a case from the medical officer; and (4) whether the clerk could require of a medical officer a report as to the sanitary condition of a house. The council answered all these questions in the negative, adding with regard to (4) that while the medical officer ought to draw the attention of the guardians to any serious sanitary defect that interfered with proper attention to a Poor-law patient, the general sanitary state of the house should be reported on by the medical officer of health. The council unanimously confirmed the appointment of the honorary secretary, Dr. Major Greenwood, to act as their representative on the Council for District Nursing. The honorary secretary said that the report of the Association on the Poor-law Institutions Order, 1913, had been considered by the Public Health Committee of the British Medical Association, and on their recommendation had been endorsed by the central council. In regard to the situation of Poor-law medical relief at Burnley a letter was read from Dr. A. P. Agnew, in which it was stated that on April 9th, at a meeting of the Burnley Division of the British Medical Association, a resolution was passed that no member should accept a post as district medical officer under the guardians in the existing conditions. The profession refused to consider any setttlement till the late public vaccinators were reinstated, and then the other difficulty seemed insuperable. The council thought it was a matter for a Local Government Board inquiry. The honorary secretary was directed to ask Dr. Agnew to furnish any instance of neglect or deficient attendance on Poor-law patients. The council then considered complaints of Poor-law medical officers employed on military duties that they did not receive the same consideration as was given to other civilian practitioners. The following resolutions were unanimously carried:—

1. That in all cases where military duties are discharged by Poor-law medical officers the salaries paid to whole-time officers should be on a scale not less than that paid by the War Office to members of the Royal Army Medical Corps discharging similar duties.

2. That where the duties are part-time only, an addition should be made to the medical officer's salary in proportion to the extra labour involved.

It was decided that the annual meeting should be held early in July, preceded by a council meeting, and that only formal or urgent business should be transacted.

ROYAL INSTITUTION.—The annual meeting of the members of the Royal Institution was held on May 1st, Sir James Crichton-Browne, Treasurer and Vice-President, being in the chair. The annual report of the committee of visitors for the year 1914, testifying to the continued prosperity and efficient management of the institution, was read and adopted. The report of the Davy Faraday Research Laboratory committee was read. Forty-four new members were elected in 1914. Sixty-two lectures and 19 evening discourses were delivered in 1914. The books and pamphlets presented amounted to about 338 volumes, making with 652 volumes (including periodicals bound) purchased by the managers, a total of 990 volumes added to the library in the year. Thanks were voted to the president, treasurer, and secretary, to the committees of managers and visitors, and to the professors, for their valuable services to the institution during the past year. The following gentlemen were unanimously elected as officers for the ensuing year:—President: The Duke of Northumberland. Treasurer: Sir James Crichton-Browne. Secretary: *Colonel Edmond H. Hills. Managers: *Sir Thomas Barlow, Dr. Horace T. Brown, *Dr. J. H. Balfour Browne, Dr. Andrew Carnegie, Mr. Charles Edward Groves, Sir Robert Hadfield, *Mr. Charles Hawksley, the Hon. Richard C. Parsons, *Mr. Edward Pollock, *Sir James Reid, Lord Rothschild, Mr. Alexander Siemens, Mr. Alan A. Campbell Swinton, Mr. Harold Swithinbank, and *Lord Wrenbury. Visitors: Rev. Edward S. Dewick, Lieutenant-Colonel Henry E. Gaulter, Mr. Joseph G. Gordon, Dr. William J. Gow, Dr. J. Dundas Grant, Mr. John W. Jarvis, Mr. James Y. Johnson, Mr. H. R. Kempe, Mr. Francis Legge, Mr. Francis K. McClean, Mr. Ernest R. Moon, Mr. Richard Pearce, Mr. Henry G. Plimmer, Mr. Arthur J. Walter, and Sir Henry J. Wood. At a general meeting held on Monday last, May 3rd, the Duke of Northumberland, K.G., the President, in the chair, special thanks were returned to Dr. Thomas Dewar for a donation of £15 15*s.* to the Fund for the Promotion of Experimental Research at Low Temperature. The managers whose names above are marked with an asterisk were elected vice-presidents.

NORFOLK AND NORWICH HOSPITAL.—The report of the board of management of this hospital for the year 1914 records a deficit of £1857 10*s.* 8*d.* The total income was £12,429 6*s.* 9*d.* and the total expenditure £14,286 17*s.* 5*d.* Without encroaching on the ordinary accommodation of the hospital, provision was made for the treatment of the sick and wounded from the seat of war. 937 men were received up to Dec. 31st, 1914. Since that time further accommodation has been provided.

Her Majesty the Queen has sent £250 to the London (Royal Free Hospital) School of Medicine for Women to pay for the training and expenses of a woman medical student. The money formed part of a fund placed at the disposal of the Queen by the wives of Freemasons. The council will make known shortly the conditions for the award of the Queen's gift.

ROYAL SANITARY INSTITUTE. — A sessional meeting of the institute will be held in the Guildhall, Shrewsbury, on Friday, May 28th, when a discussion on the Value of Mechanical Filters in the Purification of Water will be opened by Dr. Thomas Orr, medical officer of health of Shrewsbury. On Saturday, May 29th, visits will be made to Shrewsbury Housing Scheme, Ditherington; Mechanical Filters, Chester-street; and the Public Abattoir.

A GOLDEN WEDDING.—Mr. Alfred Grace, M.R.C.S., L.S.A., of Chipping Sodbury, Gloucestershire, a brother of Mr. W. G. Grace, celebrated the fiftieth anniversary of his wedding on April 26th, and received the congratulations of his friends and patients. Mr. Grace, like his brother, has been a noted sportsman, but his keenness for hunting eclipsed his interest in cricket.

A CENTENARIAN.—Rachel Case, of Wootton Fitzpaine, near Charmouth, has recently died in her 101st year.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Government and the Drink Problem.

PARLIAMENT has now been informed of the measures which the Government propose as a means of checking the excessive consumption of alcoholic beverages in war time, particularly in districts where munitions of war are being produced. The scheme is twofold—control of the licensed trade in the munition areas, and heavy additional taxation on beer and spirits. The necessary Parliamentary powers to enable the control to be exercised is taken by the Defence of the Realm (Amendment No. 3) Bill, which was introduced by the Chancellor of the Exchequer in the House of Commons on Thursday, April 29th. That control goes the length of having power to close any public-house, the presence of which for the moment is considered injurious. On the same evening resolutions were passed in Committee of Ways and Means for the purpose of imposing very heavy additional taxation upon spirits and also upon beers containing more than 7 per cent. of proof spirit. The duty upon spirits is practically doubled, the surtax being at the rate of 14*s.* 9*d.* per gallon. In the original resolution submitted to the House it was proposed that a proportionate increase of duty should be imposed on the following articles in which spirit is contained, or in the manufacture of which spirit is used—chloral hydrate, chloroform, collodion, ether acetic, ether butyric, ether sulphuric, iodide of ethyl, ethyl bromide and ethyl chloride. These articles were, however, omitted from the resolution imposing the surtax, on the motion of the Attorney-General. The wine duty is quadrupled and an additional charge of 15*s.* put on sparkling wine in bottle. The additional duties on the heavier beers are on a sliding scale which is as follows:—For every 36 gallons of beer brewed at a gravity of more than 43° and not exceeding 48°, 12*s.*; of more than 48° and not exceeding 53°, £1 4*s.*; of 53° and over, £1 16*s.*

These resolutions had provisional effect as soon as they were passed, but in order that a more permanent character should be given to them they require to be embodied in a Finance Act.

A good deal of criticism has been made of the Government proposals to place heavy taxes on beer and spirits. The Chancellor of the Exchequer has been meeting deputations from the licensed trade, and the opinion is strongly held at Westminster that considerable modifications in the scale of the duties will be made. But the whole subject at present is under negotiation.

Local Government Board Report.

The forty-third annual report of the Local Government Board (Part III.) for the year 1913–14 has been issued as a Parliamentary Blue-book. It deals with public health and local administration.

HOUSE OF COMMONS.

WEDNESDAY, APRIL 28TH.

Vaccination in the Central Provinces.

Mr. SNOWDEN asked the Under Secretary of State for India whether it was proposed to introduce legislation into the Central Provinces for the enforcement of vaccination; and, if so, whether a conscience clause would be introduced into the Vaccination Act, as in the case of the English and Scotch Vaccination Acts of 1907.—Mr. CHARLES ROBERTS replied: Compulsory vaccination is already enforceable in municipalities at the request of the municipal commissioners and cantonments in the Central Provinces under an Act of 1880. An amending Bill is now proposed extending the power of enforcing compulsory vaccination to certain quasi-municipal areas. It is specified both in the Act and in the amending Bill that it is open to any inhabitant of the area to object to the extension, but in neither case is there a conscience clause.

THURSDAY, APRIL 29TH.

Anti-Inoculation Leaflet.

Mr. RONALD MCNEILL asked the Under Secretary for War whether his attention had been called to the circulation by some person or persons unknown of a leaflet suggesting that a Territorial died last November, at Lytham, as the result of antityphoid inoculation, and that the death certificate falsely alleged a different cause of death; and whether he would take steps to prevent the dissemination of incitements to soldiers to endanger their own and their comrades' lives by refusing to undergo inoculation.—Mr. TENNANT said in reply: Reports have been received that this leaflet has been distributed both with and without the statement that the death was ascribed to a different cause on the death certificate. Such steps as were considered necessary have been taken.

Mr. McNEILL: Cannot the right honourable gentleman deal with this matter under the Defence of the Realm Act?—Mr. TENNANT: I am advised that proceedings could not be taken in this case. Therefore I am afraid that the answer to the honourable Member is in the negative. But if he likes to repeat the question I will give him a more definite reply.

Medical Officers of the Territorial Force.

Mr. FALLE asked the Under Secretary for War whether he was aware that all lieutenants, Royal Army Medical Corps, had recently been promoted to the rank and pay of captains, and whether a medical officer, however long his service, attached to a unit other than a medical unit could not attain higher rank than that of major, while *à la suite* medical officers, who were not attached to Territorial or other units before the war, started now as lieutenant-colonels, majors, and captains, and drew the pay of those ranks; that officers *à la suite* were, for the most part, able to remain in their own town and carry on their private practice without passing any examination for rank; whether he could see his way to grant all majors and captains of, say, five years' standing, attached before the war to Territorial or other units, the rank of lieutenant-colonel or major and the pay of those ranks; and would he remove the disadvantages as to promotion and pay now attaching to the medical officer who had served for years before the war attached to a Territorial or other unit.—Mr. TENNANT said in reply: The position of Territorial Force Royal Army Medical Corps officers in regard to promotion and pay is now under consideration.

Medical Attendance and Hospital Charges for Soldiers.

Mr. WING asked the Financial Secretary to the War Office whether the weekly charge for insurance covered all medical attendance and hospital charges for soldiers without further deductions.—Mr. TENNANT answered: No, sir. Medical attendance is free, but for hospital treatment a stoppage up to, but not exceeding, 7*d*. a day may be made if the officer commanding so decides.

Health of the New Troops in India.

Mr. SAMUEL SAMUEL asked the Under Secretary for India whether he could recommend his department to supply to the troops in India mosquito nets to prevent the sickness amongst the new troops going out and to ensure economy to the country in extra efficiency.—Mr. CHARLES ROBERTS replied: The provision of mosquito curtains has been sanctioned for all men of the Territorial Force who may have to serve on the plains in India in the coming summer.

Bovine Tuberculosis.

Sir JOHN SPEAR asked the Parliamentary Secretary to the Board of Agriculture how many bullocks suffering from tuberculosis were destroyed during the last complete year, and the amount of compensation paid to the owners of the animals.—Sir HARRY VERNEY answered: The number of bovine animals in respect of which notices of intended slaughter under the Tuberculosis Order, 1913, were received during the year ended June 30th, 1914, was 6651, but the actual number of animals slaughtered was probably less. Compensation is paid by the local authorities, and only in part refunded by the Board.

TUESDAY, MAY 4TH.

Enteric Fever in the Expeditionary Force.

Replying to Sir COURTENAY WARNER, Mr. TENNANT (Under Secretary for War) said: The latest information with regard to the incidence of enteric fever amongst the British troops in the Expeditionary Force is as follows. Up to date 963 cases have occurred. Of these, 780 have been analysed and 142 cases have occurred in men inoculated fully with two doses of vaccine. Amongst these 10 deaths have occurred, giving a case mortality of 7 per cent. 157 cases have occurred in men partially protected by inoculation—i.e., who have had only one dose of vaccine. Amongst these there have been 10 deaths, giving a case mortality of 6·36 per cent. 481 cases have occurred in uninoculated men. Amongst these there have been 100 deaths, giving a case mortality of 20·79 per cent. To appreciate the full value of these figures it must be brought to notice that 90 per cent. of the troops forming the Expeditionary Force have been inoculated voluntarily. Therefore, amongst 90 per cent. of the force—i.e., inoculated men—there have been 299 cases and 20 deaths. In the other 10 per cent.—i.e., uninoculated men—there have been 481 cases and 100 deaths.

Release of Medical Personnel.

Sir JOHN LONSDALE asked the Secretary of State for Foreign Affairs whether any agreement had yet been arrived at between the belligerent Powers in reference to the mutual release of medical personnel detained with prisoners of war in the respective countries.—Sir E. GREY replied: The answer is in the negative, and negotiations on the subject are still proceeding with the German Government through the United States Embassies in London and Berlin.

Medical Officers of the Territorial Force.

Sir CLEMENT KINLOCH-COOKE asked the Under Secretary for War whether he was aware that officers in the Territorial Force were excluded from obtaining increments of pay similar to those given to officers in the Regular Army; that a major in the Royal Army Medical Corps, Territorial Force, although having 10 years' service in the ranks, received 23*s*. 6*d*. a day, and must render three years' embodied service before being entitled to draw 26*s*.; and would he consider the advisability of removing what was regarded to be an injustice throughout the Territorial Force, and grant increments of pay to all ranks in respect of combined service rendered before and after embodiment.—Mr. TENNANT answered: Service in the Territorial Force before embodiment cannot be regarded as equivalent to continuous service in the Regulars, but the position of Territorial Force Royal Army Medical Corps officers with regard to pay and promotion is now receiving consideration.

The Use of Asphyxiating Gases in Warfare.

Mr. RONALD McNEILL asked the Under Secretary for War whether his attention had been called to a statement, made by the official eye-witness with the British Army at the front on April 6th, to the effect that it had been learnt from German prisoners that the enemy were preparing to asphyxiate our men by means of poisonous gas stored under pressure in steel cylinders; whether this form of attack was, in fact, adopted by the Germans on April 22nd; whether any, and what, steps had been taken in the interval to protect our men against the effects of poisonous gas; and whether it was intended to allow the enemy to pursue this mode of warfare without employing similar expedients against him, after due notice, by way of retaliation.—Mr. TENNANT said in reply: I regret to have to inform the honourable gentleman that, notwithstanding their engagements under the Hague Convention, the Germans have on more than one occasion used poisonous gases in the manner described and have caused the death of numbers of our men by poisoning. In spite of rumours to the contrary, it was not believed that any Power which had signed the Hague Convention could be guilty of so heinous a breach of its solemn undertaking as the violation of the fundamental principles of that agreement by the introduction into modern warfare of such a method as this which may have far-reaching results. The latter part of the question is under consideration.

The Production of Morphia.

Mr. THEODORE TAYLOR asked the President of the Board of Trade what were the total amounts and values of morphia manufactured in the United Kingdom in each of the years 1910, 1911, 1912, 1913, and 1914; what were the amounts and values exported to China, Japan, and Hong-Kong respectively; and whether any provisions were in operation to secure the limitation of its use to medical or other legitimate purposes.—Mr. RUNCIMAN said in reply: There are no available statistics of the production of morphia in the United Kingdom, but I will circulate with the votes a statement showing the exports of morphia to China, Japan, and Hong-Kong. His Majesty's Minister at Peking has reported that the Chinese Government have announced their intention of putting the International Opium Convention into force as from Feb. 11th last, but His Majesty's Government have no information as to the intentions of the Japanese Government in this respect or as to any regulations in force in either country as to the use of morphia. As regards Hong-Kong, I understand that the Pharmacy Ordinance of 1910 imposes certain restrictions on the importation and sale of morphine.

The following statement (circulated with the votes) shows the quantity and value of morphia and morphia salts exported and re-exported from the United Kingdom to the countries specified in each of the undermentioned years:—

		Quantity. Ozs.	Value. £.
To China	1911	15	9
	1912	—	—
	1913	2,270	1,080
	1914	2,329	900
To Japan	1911	58,352	24,071
	1912	125,907*	68,650*
	1913	252,110	118,794
	1914	352,130	143,975
To Hong-Kong	1911	17,200	6,347
	1912	—	—
	1913	640	320
	1914	—	—

* Includes 1600 ounces, valued at £800, of morphia, &c., of foreign or colonial origin.

Note.—The exports and re-exports of morphia and morphia salts were not separately recorded in the trade returns of the United Kingdom prior to Jan. 1st, 1911.

Scottish Undergraduates in the Army.

Mr. McCALLUM SCOTT asked the Secretary for Scotland whether he had considered the position of the students of Scottish Universities who were now serving in His Majesty's forces, and with regard to whom the universities had no power to modify their curricula; and whether he had received representations from any of the university courts with regard to this question.—Mr. McKINNON WOOD answered: I have received a representation from the Glasgow University Court on this subject, which is receiving consideration.

WEDNESDAY, MAY 5TH.

Consultant Surgeons for the Navy.

Commander BELLAIRS asked the Secretary to the Treasury whether he was aware that the Board of Admiralty made an arrangement during peace time with eight members of the Royal College of Surgeons under which these gentlemen were each drawing £5000 per annum, though the circumstances of the war had not up to now interfered with their private practice; and whether this total expenditure of £40,000 per annum was reviewed by the Treasury before it was sanctioned.—Mr. ACLAND answered: I understand that these appointments were made in the first instance under a general authority given by the Treasury in 1908 for the appointment in the event of the outbreak of war of consulting surgeons for hospital ships at a remuneration not then specified. On August 14th the Treasury were informed of the appointments, and also that for administrative reasons five distinguished surgeons and one physician (with remuneration at the rate of £5000 a year each) were being employed at the Royal Naval Hospitals instead of being sent out on hospital ships. Upon representations from the Admiralty that it was essential that the services of these specialists should be available at the respective hospitals for the performance of operations at a moment's notice, the Treasury sanctioned the arrangements which had been made. The total number of appointments at £5000 a year is six and not eight as stated in the question. As regards the conditions of employment I am informed by the Admiralty that five of the six reside at and are performing daily duties at Haslar, Plymouth, and Chatham, and the sixth has to visit and perform surgical work in all the naval and auxiliary hospitals in Scotland. In addition the five who are resident at the English hospitals visit for consulting purposes other hospitals in which naval sick and wounded are being treated. It is only in any casual spare time that private practice can be followed.

Spirit Taxes and the Manufacture of Medicine.

Mr. FOSTER asked the Chancellor of the Exchequer whether he proposed in the suggested increased taxation of spirits to include in such taxation spirit used in the manufacture of medicine.—Mr. LLOYD GEORGE wrote in reply: I am considering this matter. The Board of Customs and Excise are in communication with the Pharmaceutical Society.

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, AND UNWIN, LIMITED, London.
Perpetual Peace. By Immanuel Kant. Translated, with Introduction and Notes, by M. Campbell Smith, M.A., with Preface by Professor Latta. Price 2*s.* net.

CHURCHILL, J. AND A., London.
A Manual for Midwives. By C. Nepean Longridge, M.D. Vict., F.R.C.S. Eng., M.R.C.P. Lond., and John Bright Banister, M.D., B.C. Cantab., M.R.C.P. Lond., F.R.C.S. Edin. Second edition. Price 3*s.* 6*d.* net.

ORMIGGINI, A. F., Genoa.
Significato Bio-Filosofico della Guerra. By Dr. William Mackenzie. Price Lire 2.

GREEN, W., AND SON, Edinburgh and London.
Encyclopædia Medica. Edited by J. W. Ballantyne, M.D., C.M., F.R.C.P.E. Second edition. Vol. I. Price 2*s.* net.

LAURIE, T. WERNER, London.
Painless Childbirth in Twilight Sleep. By Hanna Rion. Price 6*s.* net.

LEWIS, H. K., London.
Leper Houses and Mediæval Hospitals (FitzPatrick Lectures, 1914). By Charles A. Mercier, M.D., F.R.C.P. Price 1*s.* net.
Swanzy's Handbook of the Diseases of the Eye and their Treatment. Edited by Louis Werner, M.B., F.R.C.S. Irel. Eleventh edition. Price 12*s.* 6*d.* net.
War Surgery. By Edmond Delorme. Translated by H. de Méric, Surgeon to In-patients, French Hospital, London. Price 5*s.* net.

LIPPINCOTT, J. B., COMPANY, Philadelphia and London.
The Commoner Diseases, their Causes and Effects. By Dr. Leonhard Jores (Marburg). Authorised English translation by William H. Woglom, M.D., Assistant Professor in Columbia University. Price 16*s.* net.

LIVINGSTONE, E. AND S., Edinburgh.
Posological Tables; Appendix on Poisons; Index of Diseases and Medicines arranged according to their Actions. By W. Craig, M.D., C.M., F.R.S.E., F.R.C.S. Edin. Fourth edition. Price 1*s.* net.

MACMILLAN AND CO., London.
Human Physiology. By Professor Luigi Luciani. Translated by Frances A. Welby. With a preface by J. N. Langley, F.R.S., Professor of Physiology in the University of Cambridge. Vol. III., Muscular and Nervous Systems. Edited by Gordon M. Holmes, M.D. Price 18*s.* net.

METHUEN AND CO., LIMITED, London.
Health for the Middle Aged. By Seymour Taylor, M.D., F.R.C.P., &c. Price 1*s.* net.

PHARMACEUTICAL PRESS, London.
Supplement to the British Pharmaceutical Codex, 1911, including Additions, Alterations, and Corrections. Price 1*s.* net.

ROUTLEDGE, GEORGE, AND SONS, London.
A Chaplet of Herbs; Gatherings from the Early Herbals. By Florence Hine. Price 2*s.* 6*d.* net.

UNIVERSITY PRESS, Cambridge.
A Campaign against Consumption. Papers relating to Tuberculosis. By Arthur Ransome, M.D., F.R.C.P., F.R.S. Price 10*s.* 6*d.* net.

UNIONE TIPOGRAFICO-EDITRICE TORINESE, Corso Raffaello, 28, Torino.
Guida per il Medico-Chirurgo in Guerra. By Dott. Pietro Sisto, Aiuto e docente di Patologia speciale medica dimostrativa, and Dott. Ottorino Uffreduzzi, Aiuto e docente di Clinica Chirurgica Operativa, Regia Università di Torino. Two volumes. Price Lire 5.

WILEY, JOHN, AND SONS, New York. CHAPMAN AND HALL, London.
Œdema and Nephritis: A Critical, Experimental, and Clinical Study. By Martin H. Fischer, Doctor of Medicine, Eichberg; Professor of Physiology in the University of Cincinnati. Second and enlarged edition. Price 21*s.* net.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

NASH, L. C., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer to the Shildon Urban District Council.

OVEREND, H. F., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Irlam District of the county of Lancaster.

RIORDAN, WILLIAM, L.R.C.S. Irel., L.K.Q.C.P. Irel., has been appointed Medical Officer for the Clonmoyle Dispensary District.

TAYLOR, A. J. T., has been appointed Resident Physician at the Edinburgh Dispensary.

TIBBLES, SYDNEY G., Temporary Lieutenant, R.A.M.C., has been appointed Specialist in Ophthalmology to Devonport Military Hospital.

WIGAN, CHARLES ARTHUR, M.D. Durh., M.R.C.S., L.S.A., has been re-appointed Chairman to the Portishead (Somerset) District Council.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

ALTON, HANTS. LORD MAYOR TRELOAR CRIPPLES' HOSPITAL.—Two Assistant Resident Medical Officers. Salary as arranged, with board, residence, and laundry.

ANGLO-SERBIAN HOSPITAL, Urnjatchka, Benja, Serbia.—Surgeon.

BETHLEM ROYAL HOSPITAL, Lambeth-road, S.E.—Assistant Medical Officer, unmarried. Salary £275 per annum, with apartments, board, and laundry.

BIRKENHEAD BOROUGH HOSPITAL.—Female Senior and Junior House Surgeons. Salary £180 and £150 per annum respectively, with board and laundry.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £250 per annum, with apartments, attendance, &c.

BIRMINGHAM, ROMSLEY HILL SANATORIUM FOR CONSUMPTIVES.—Assistant Resident Medical Officer, unmarried. Salary £250 per annum, with board, apartments, and laundry.

BOLTON INFIRMARY AND DISPENSARY.—Third House Surgeon. Salary £170 per annum, with apartments, board, and attendance.

BOURNEMOUTH, ROYAL VICTORIA AND WEST HANTS HOSPITAL.—House Surgeon for six months. Salary £100 per annum, with board, lodging, washing, &c.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £120 per annum, with board, residence, and laundry.

BRIGHTON EDUCATION COMMITTEE.—Temporary Junior School Doctor. Salary at rate of £350 per annum.

BRISTOL, BEAUFORT WAR HOSPITAL.—Chief Resident Surgeon. Also Resident Physician and Surgeon.

BRISTOL GENERAL HOSPITAL.—Second House Physician, House Surgeon, Casualty House Surgeon, and Resident Obstetric Officer, all for six months. Salary at rate of £150 per annum, with board, residence, &c.

BRISTOL ROYAL INFIRMARY.—Throat, Nose, and Ear House Surgeon for six months. Salary at rate of £120 per annum, with board, apartments, and laundry.

BURNLEY UNION WORKHOUSE.—Resident Assistant Medical Officer or Locum Tenens. Salary £200 per annum, with apartments, rations, washing, and attendance.

BURNLEY, VICTORIA HOSPITAL.—House Surgeon. Salary £135 per annum, with residence, board, and washing.

BURY INFIRMARY.—Senior and Junior House Surgeons. Salary £175 and £150 per annum respectively, with board, residence, and washing.

Buxton, Derbyshire, Devonshire Hospital.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

Cardiff, King Edward VII.'s Hospital.—Resident Surgical Officer. Salary £160 per annum, with board, laundry, and apartments.

Carlisle Non-Provident Dispensary.—Resident Medical Officer. Salary £200 per annum, with apartments (not board).

Carmarthen, Joint Counties Asylum.—Temporary Second Assistant Medical Officer. Salary at rate of £200 per annum, with board, lodging, washing, &c.

Cheshire County Council.—District Tuberculosis Officer. Salary £350 per annum.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—House Physician. Salary as agreed, with board, residence, and washing.

Croydon Borough Hospital.—Senior Resident Medical Officer and Bacteriologist. Salary £200 per annum, with board, residence, and washing. Also Assistant Resident Medical Officer. Salary £150 per annum, with board, residence, and laundry.

Croydon Union.—Assistant Medical Superintendent of Infirmary and Assistant Medical Officer of Workhouse and Childrens' Homes. Salary £225 per annum, with usual residential allowances.

Denbigh, North Wales Counties Asylum.—Second Assistant Medical Officer.Salary £220 per annum, with apartments, board, attendance, and washing.

Derby, Mickleover County Asylum.—Medical Superintendent. Salary £550 per annum, with house, laundry, &c.

Derbyshire Education Committee.—Temporary Female Assistant School Medical Officers. Salary £400 per annum, inclusive.

East Sussex County Council.—Female Inspector of Midwives and Child-Welfare. Salary £190 per annum.

Essex County.—Temporary Assistant Tuberculosis Officer. Salary at rate of £350 per annum.

Exeter City.—Assistant Medical Officer of Health and Assistant School Medical Officer. Salary £300 per annum.

Guildford, Royal Surrey County Hospital.—House Surgeon. Salary £150 per annum, with board, residence, and laundry.

Hemel Hempstead, Herts, West Herts Hospital.—Resident Medical Officer. Salary £150 per annum, with rooms, board, and washing.

Hospital for Consumption and Diseases of the Chest, Brompton.—House Physician for six months. Salary 30 guineas.

Hull Royal Infirmary.—House Physician, unmarried. Salary £105 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging. Also Casualty House Surgeon. Salary at rate of £80, with board and lodging.

Indian Medical Service.—Ten Commissions.

Inverness, Northern Infirmary.—House Surgeon. Salary £150 per annum, with board, &c.

Ipswich Borough Mental Hospital.—Resident Medical Superintendent. Salary £400 per annum, with residence, washing, &c.

Island of Sanday, Orkney.—Medical Practitioner and Vaccinator. Salary £100 per annum.

King Edward VII. Sanatorium, Midhurst, Sussex.—Second Assistant Medical Officer. Salary £150 per annum, with board, lodging, and attendance.

Leeds General Infirmary.—Resident Casualty Officer. Salary £125 per annum, with board, residence, and laundry.

Lochgoilhead and Kilmorich Parish.—Medical Officer and Vaccinator. Salary £100 per annum.

London Fever Hospital, Liverpool-road, N.—Assistant Resident Medical Officer. Salary £250 per annum, with residence and board.

Macclesfield, Cheshire County Asylum, Parkside.—Junior Assistant Medical Officer. Salary £250 per annum, with apartments, board, laundry, &c.

Manchester, Ancoats Hospital.—Two Residents.

Manchester Children's Hospital, Pendlebury.—Resident Medical Officer, unmarried, for six months. Salary at rate of £100 per annum.

Manchester Children's Hospital, Gartside-street. — Medical Officer. Salary £180 per annum.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Metropolitan Ear, Nose, and Throat Hospital, Fitzroy-square, W. Clinical Assistants.

Mile End Old Town Infirmary.—Assistant Medical Officer. Salary £275 per annum, with board, lodging, and washing.

Mount Vernon Hospital for Consumption and Diseases of the Chest, Northwood, Middlesex.—House Physician. Salary £150 per annum, with board, residence, and washing.

Newport Mental Hospital, Caerleon, Mon.—Temporary Assistant Medical Officer. Salary 5 guineas per week, with board, rooms, and attendance.

Norwich, 3rd Line Depôt, 2nd East Anglian Field Ambulance, Royal Army Medical Corps (Ter.).—Two Medical Officers. Pay and allowances as in Regular Army.

Nottingham Children's Hospital.—Female House Surgeon for six months. Salary at rate of £130 per annum, with apartments, board, and washing.

Oxford, Radcliffe Infirmary and County Hospital.—Honorary Surgeon.

Paddington Green Children's Hospital, W.—Temporary Surgeon in Charge of Out-patients.

Portsmouth Corporation Mental Hospital.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—Temporary Assistant Physician. Salary £25 per annum. Also Temporary Surgeon for Ear, Nose, and Throat Department. Salary £25 per annum.

Rotherham Hospital.—Junior House Surgeon. Salary £125 per annum, with board, lodging, and washing.

Royal National Orthopædic Hospital, 234, Great Portland-street, W.—Resident Medical Officer.

St. Mary's Hospital for Women and Children, Plaistow, E.—Resident Medical Officer and Assistant Resident Medical Officer. Salary at rate of £110 and £90 per annum respectively, with board, residence, and laundry.

St. Pancras Dispensary, 39, Oakley-square, N.W.—Resident Medical Officer, unmarried. Salary £300 per annum, with residence and attendance.

Salisbury General Infirmary.—House Surgeon and Assistant House Surgeon, unmarried. Salary £100 and £75 per annum respectively, with apartments, board, lodging, and washing.

Sheffield Municipal Tuberculosis Dispensary.—Two Assistant Medical Officers. Salary £350 per annum.

Sheffield Royal Infirmary.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.

Shrewsbury, Royal Salop Infirmary.—House Physician. Salary at rate of £110 per annum, with board and apartments.

Somerset County Education Committee.—School Oculist and Medical Inspector. Salary £350 per annum.

South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Female House Surgeon. Salary £150 per annum, with residence, board, and washing.

Taunton and Somerset Hospital, Taunton.—Senior House Surgeon. Salary £250 per annum, with board, lodging, and laundry.

Tiverton Hospital, Devon.—House Surgeon and Dispenser. Salary £80 per annum and all found.

Tunbridge Wells General Hospital.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, &c.

Walsall and District Hospital.—Assistant House Surgeon and Anæsthetist. Salary £150 per annum, with board, residence, and laundry.

Warrington Infirmary and Dispensary.—Junior House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.

Warrington, Lord Derby War Hospital.—Resident Physician and Surgeon. Also Resident Pathologist and Bacteriologist.

West Bromwich and District Hospital.—House Surgeon and Assistant House Surgeon, unmarried. Salary £150 and £120 per annum respectively, with residence, board, and laundry.

West-End Hospital for Diseases of the Nervous System, Paralysis, and Epilepsy, 73, Welbeck-street, W.—Clinical Assistants to Out-Patients' Physicians.

West Ham and Eastern General Hospital, Stratford, E.—House Physicians. Salary £120 and £100 per annum, with board, residence, and washing.

Whitechapel Dispensary for the Prevention of Consumption.—Temporary Medical Officer. Salary £500 per annum.

Wolverhampton and Staffordshire General Hospital.—Resident Medical Officer and House Surgeon for six months. Salary at rate of £150 per annum, with board, rooms, and laundry.

Worcester County and City Asylum.—Assistant Medical Officer. Salary £250 per annum, all found.

Worcester General Infirmary.—Resident Medical Officer. Salary £150 per annum, with board, residence, and washing.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Birtley, in the county of Durham ; and at Lurgan, in county Armagh.

Births, Marriages, and Deaths.

BIRTHS.

Davies.—On April 24th, at St. Olafs, Kingston-on-Thames, to Dr. and Mrs. H. R. Davies, a son.

Robertson.—On April 27th, at Clarence-drive, Hyndland, Glasgow, to Dr. and Mrs. Berkeley H. Robertson, a daughter.

Stewart.—On April 26th, at Pinewood, Beckenham, the wife of F. W. Stewart, M.D., of a daughter.

Woods.—On May 4th, at Waldemar-mansions, S.W., the wife of W. W. Woods, M.R.C.S., of a son.

MARRIAGES.

Attwater—Hawkins.—On April 29th, at St. Margaret's Church, Westminster, Harry Lawrence Attwater, M.A., M.B., M.C., F.R.C.S., Temporary Lieutenant, R.A.M.C., to Nora Collingdon Hawkins, fourth daughter of Dr. and Mrs. Hawkins, of Hillfield, Broadwey, Dorset.

Gutteridge—Baxter.—On April 23rd, at St. Giles in the Fields, London, Lieutenant Bernard George Gutteridge, R.A.M.C., to Mary, second daughter of William Baxter, Esq., of Hilston.

Milne—Brown.—On April 24th, at West Coats Parish Church, Edinburgh, Robert Milne, M.D., M.S., F.R C.S., to Alice May, second daughter of John Brown, Esq., Coltbridge-terrace, Murrayfield, Edinburgh.

Yorke—Greening.—On May 4th, at the Wesleyan Church, Frodsham, by the Rev. H. Lefroy Yorke, M.A., B.D., father of the bridegroom, assisted by the Rev. William Stevenson, Professor Warrington Yorke to Elsie, only daughter of Mr. and Mrs. N. Greening, of Newlands, Frodsham.

DEATHS.

Bell.—William Bell, M.R.C.S., J.P., V.D., son of John Bell, M.D., of Uppingham, at Rutland House, New Brighton, in his 77th year.

Blakiston.—On May 3rd, at Ashington, Glastonbury, Arthur Alexander Blakiston, M.R.C.S., aged 63 years.

Gowers.—On May 4th, at Ladbroke-square, W., Sir William Richard Gowers, M.D., F.R.S., aged 70 years.

Lawrance.—On May 1st, at his residence, Shaftesbury-road, Hammersmith, Frederick Lawrance, M.R.C.S. Eng., L.S.A., in his 85th year.

Neely.—On April 25th, killed in action at Ypres, Hugh Bertram Neely, L.D.S., Guy's Hospital, Second Lieutenant, 1st Suffolk Regiment, aged 26 years.

Simpson.—On May 3rd, at Heslington House, Worthing, Walter S. Simpson, M.R.C.S., L.R.C.P., aged 63 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HOSPITAL ARRANGEMENTS IN THE EIGHTEENTH CENTURY.

THE excellence of the hospital arrangements in the present war has excited the admiration of all who are interested in the alleviation of the sick and wounded among those who are fighting our battles at the present time. It is a contrast to what prevailed in the end of the eighteenth century. Facts may be gleaned from a pamphlet issued by the War Office in 1796 bearing the title of "Regulations for Improving the Situation of Regimental Surgeons and Mates, and for the Better Management of the Sick in Regimental Hospitals."

Up to that date the cavalry and infantry had allowances on account of medicines and hospital expenses, and these, with any other perquisites or gratuities, were to cease, after which medicines were to be supplied by the Apothecary General, and all expenses connected with hospitals were to be defrayed at the public charge. Each surgeon was to have 12*s*. per day in the cavalry and 10*s*. in the infantry. He was to have his choice of quarters according to his standing in the regiment, and in the time of war was to have the same baggage and forage money as captains. After he had put in 20 years' service he was entitled to an allowance of 5*s*. a day for life "upon production of certificates of good conduct from the commanding officers under whom he shall have served."

Surgeons' mates were in future to be designated assistant surgeons, and their pay was to be 5*s*. per day, but if on foreign stations or during war it was increased to 7*s*. 6*d*. per day.

Every regular corps was to be furnished with an airy, roomy, regimental hospital. In the event of the regiment not being in barracks, the duty of providing a place for a hospital fell upon the regimental surgeon. During an encampment a tent was allowed in aid of, but not as a substitute for, a hospital. Great attention was to be placed as to the pitching of it, and inside straw was to be worked up into mats and laid upon dry sand or gravel under each palliasse. The sides and floors of the wards were to be washed regularly, and if any contagious disease prevailed nitrous acid was to be evaporated every day. Every man was to be allowed the space of 5 ft. for his bed and to have a bed to himself. Great care was to be shown in the passing of recruits, and at convenient times and places they were to be inoculated against small-pox.

Each regimental surgeon was to be provided with a medicine chest, calculated for a corps of 1000 men, and once a year he had to make a return to the Secretary for War of what had been used during the 12 months, the said return to be accompanied by an affidavit taken before a magistrate that none of the medicines, as far as he knew, had been converted to private purposes or applied to any use but that of the regiment. Suppose an epidemic caused a run upon a certain medicine, the extra quantity could not be supplied till the prescribed formula had been complied with. If a doctor knew of a particular medicine which in specific cases would be beneficial, if it were not in the "Dispensatory" and he desired to use it he had to procure it at his own expense. Wine was only to be given when it was indispensably necessary, and it was only to be administered to the patient by the surgeon or his assistant as medicine or with food.

Each surgeon was furnished with four sets of hospital bedding for every hundred men on home service, and with six sets, while on foreign service, the other hospital necessities being in proportion. However, he was to furnish at his own expense what instruments were required, and these were specified as "capital" and "pocket." According to the list the set of the former consisted of amputating saw, or amputating saw with spare blade, metacarpel with spare blade, 2 amputating knives, 2 tenaculums, 24 curved needles, 2 Pettit's tourniquets, 4 leather tourniquets, 6 ligatures and handle for the same, 2 linen compresses, a trephine with 4 crowns, or 2 fixed trephines, lenticular and rugine, elevator and forceps, 1 perforator, brush and key, 6 scalpels, 4 catheters, 2 probangs, 1 silver probe, 1 bullet forceps, 1 polypus forceps, 2 trocars with additional canules, or with spring canules and the additional ones, 1 trocar for the hydrocele, 1 seton needle, 1 small razor, 1 small hone, 1 syringe, 1 key instrument for teeth. 1 forceps for teeth, 1 punch for teeth, 1 strong nippers for bones, thread for ligatures. The contents of a pocket case consisted of, 1 straight scissors, 1 curved scissors, 2 silver probes, 1 steel forceps, 1 scalpel, 1 spatula, 1 straight bistoury, 1 curved bistoury, probed point, 1 gum lancet, 1 caustic case, 1 director, 12 curved needles.

Regarding the "Dispensatory," a final word of caution was given. There was to be no "useless and extravagant demands for obsolete, expensive, and inefficacious medicines," and to limit the surgeons to the use of the most approved and powerful a list was drawn up for their observance. "By this plan the prescriber sees at one view what means he has to produce the effects he wishes, no time will be lost in looking over every article of medicine in his possession, his decision will be expeditiously made, and his practice will become more rational."

The advance of medical and surgical science has enormously altered the medical care of the army, and present-day sufferers are reaping the beneficial results. But the pamphlet from which we quote shows that in the army at the end of the eighteenth century provision was made commensurate with the knowledge and experience of the time; while the comparatively small numbers of men engaged made the problems presented far less severe.

THE DEFINITION OF A CONSULTANT.

To the Editor of THE LANCET.

SIR,—In reply to your correspondent "Enquirer" in THE LANCET of May 1st, I would remark that a consultant is a professional friend, adviser, and helpmate. There is the true consultant—a *rara avis*—who sees patients only in consultation with another medical man, and there is the pseudo-consultant, who has patients of his own and is called into consultation by reason of his experience or on account of a successful reputation, sometimes to assist and advise a friend, but usually at the request of the patient or patient's friends to give a second or independent opinion.

The rules that govern the conduct of a consultant are very simple, are well recognised by every member of the profession, but are incapable of strict observance, since patients are unacquainted with the rules of professional etiquette. A doctor should not attend a patient as an independent patient whom he has seen in consultation. This rule holds good if the introduction to the patient is through the doctor, but if, on the other hand, he is sent for with a view to his taking the place of the other doctor, he is justified in accepting the patient provided he acquaints and receives the consent of the doctor in attendance. This man is going to receive his dismissal under any circumstances, and therefore the second man is not doing him any injury. A refusal to attend is misunderstood by patients. Most medical men know that certain patients constantly are changing their medical advisers. I have a patient of many years' standing, and she frequently sees two or three different doctors in the week. I have seen her at 9 A.M., another doctor has seen her at noon, and a third doctor in the afternoon. Her idea is to have the advice I may give her corroborated by independent opinion. In all these years only one doctor has written to tell me of the fact that he had been called to see her. It cannot be thought that any of these doctors believed she was without a medical adviser, as she is a chronic invalid and a great sufferer. I am, Sir, yours faithfully,

May 2nd, 1915. G. SHERMAN BIGG.

BUMBLEDOM AND HYGIENE.

IN spite of all efforts to popularise the principles of hygienic living ignorance and indifference still pervade, not only the masses, but those who are officially appointed to care for them—viz., boards of guardians. A case in point, according to a report in the *Carlisle News*, arose recently out of a complaint that two boys who were being boarded out by the Brampton board of guardians had been supplied with neither overcoats nor nightshirts. Lady Carlisle very naturally supposed that the deficiency, so far as regarded nightshirts at any rate, had only to be mentioned to be remedied; but apparently to her surprise the suggestion met with opposition on the ground that nightshirts were unnecessary, for people in the country were not in the habit of wearing nightshirts at all. Lady Carlisle, who obviously has much to learn about the mental attitude of bumbledom, insisted, with praiseworthy tenacity, on the hygienic importance of changing the sweat-soaked day clothes for fresh and aired garments on going to bed. This evoked the silly retort that the soldiers at the front did not change their shirts at night, in disregard of the fact that the soldiers at the front often have to stand for hours up to their waists in water, to go on occasion for long stretches of time without food or sleep, and to expose themselves to injuries and to many dangerous and unhealthy conditions which cannot be avoided under the circumstances, but which, if they were imposed on civilians in peace time, would evoke horror at their criminal barbarity. It was admitted in the discussion that even the inmates of the workhouse were not supplied with night clothing. The attitude of indifference received adequate expression from one of the members, who, according to the report in question, provoked laughter by the remark, "Give 'em the shirts and let us change the subject." The motion to provide nightshirts, put by Lady Carlisle, was negatived by 10 votes to 5. The importance, whenever possible, of freeing the absorbent skin at night from unnecessarily prolonged contact with the toxic products of perspiration is a well-established hygienic principle and forms an integral portion of that cleanliness which is next to godliness; and the fact that individuals under pressure of temporary necessity may not always be able to comply with it is no justification whatever of its neglect as a practice of daily life under normal conditions.

AN ATTACK OF SEVERE ILLNESS APPARENTLY DUE TO EATING RHUBARB.

To the Editor of THE LANCET.

SIR,—Five days ago I was suddenly attacked with acute sickness and diarrhœa. Pulse and temperature went up rapidly, and I felt alarmingly ill. Next day these had subsided, but I had great strangury with bloody urine, which showed a considerable deposit of albumin. The other symptoms are subsiding, but the albumin remains. I am 69 years of age, and have had no illness of any kind for many years. My bladder and renal functions have always been perfectly normal.

In trying to account for this attack the only cause I can think of is that I partook rather largely of rhubarb pudding on two occasions a few days previously. The attack was very alarming and may, of course, leave some mischief of a chronic nature behind. Can it be due to oxalic acid known to be present in rhubarb? It would be interesting to know if any of your readers have had a similar experience.

I am, Sir, yours faithfully,
M.D.

May 3rd, 1913.

SACRED RELICS AS CURATIVE AGENTS.

THE desire for relics—i.e., for memorials of those whom we love or honour or both combined—is one of the oldest of human passions, and that cures would be wrought by such relics was an instinctive belief. Perhaps the earliest instance on record of a cure wrought by relics is that mentioned in the Second Book of Kings, where in Chapter 13, v. 21, we read that a dead man was cast into the sepulchre of Elisha and revived on touching the prophet's bones. In the fourth century A.D. thousands of pilgrims went to the Holy Land and other places of the East to see the holy paces and such things as the instruments of the Passion, relics of the martyrs, Job's tomb and his dunghill. Concerning the last-named we learn from St. Chrysostom that many "took a long journey over the sea from the ends of the earth to see it and that from the sight thereof they derive every help and much 'philosophy,'" meaning probably by this last word a method of regular holy life. In the later Middle Ages the cult of relics became a scandal in many ways, witness Chaucer's description of the Pardoner with his collection of relics, such as Our Lady's veil and the glass of "pigges bones." To go back a few centuries, states and countries vied with one another as to which of them should own the more important relics, and the State of Venice in particular had a passion for relics. It began with the body of St. Mark, which was stolen or rescued from the infidels of Alexandria, in about 827, by means of a somewhat unworthy trick, and after the sack of Constantinople in 1204 she acquired, among other relics, the arm of St. George the Martyr, part of the body of St. John Baptist, and some of the Holy Blood. Later, in 1237, the Crown of Thorns, which had been in the sanctuary of Constantinople and had been mortgaged to a Venetian, was redeemed by St. Louis of France and deposited in the Sainte Chapelle. Numerous instances of cures wrought by relics are on record—for example, that performed upon a niece of Pascal, on March 24th, 1653, whose ulcer was touched and cured by a thorn from the Crown.

Some new and curious details concerning this widespread belief are furnished in a work recently published in Holland by Dr. A. Eekhof upon the Wandering Missionaries, or *Quaestuarii*, who sold indulgences, and during their peregrinations for this purpose wrought many wonderful cures by means of relics. These details are compiled from a mass of forgotten documents in the episcopal archives of Utrecht. The prophylactic virtues of greatest potency appear to have been those possessed by the relics of St. Hubert, patron saint of Utrecht Cathedral. One of these, his stole, is said to have been especially efficacious for the cure of rabies. This was only to be expected from St. Hubert's connexion with the chase. The treatment consisted in making a small incision in the skin of the victim's forehead and inserting therein a thread taken from the material of the stole. The ecclesiastics of Utrecht also claimed great success in relieving the sick by the use of relics of St. Martin of Tours which had been leased by the French clerics to their brethren at Utrecht, who found them a source of revenue. Almost equally efficacious were the relics of St. Anthony, which in 1079 were brought to Flanders by a Duke Jocellinus and placed in a monastery at Belle. Their application was most valued as a remedy for the plague and for "ignis sacer." Dr. Eekhof shows from the documents how the frauds practised by the religious in relation to alleged cures were frequently exposed, until the authorisation of such "quests" was forbidden by the Council of Trent in 1563.

COMPRESSED DRUGS IN THE GERMAN ARMY.

UP to 1897 the German military medical authorities used little packets of powders which had hitherto been supplied to their hospitals and dispensaries, but they wished to replace them by something less bulky and more readily conserved during the exigencies of war. They accordingly experimented with compressed tablets and with the necessary machinery for making them. Several different kinds of tablets were produced as a result, some satisfactory and others not quite so, some being liable to deteriorate and others to melt in hot weather, and there was also the difficulty of controlling the quality and quantity of the active ingredients in the compressed tablets. Some kinds of tablets were found too difficult to make and were purchased in the open market. A list of 18 different kinds manufactured was published in THE LANCET of March 10th, 1906, p. 703, and probably has been largely added to now. After the war is over we shall learn more of the success or failure of the treatment of the troops with the new methods and preparations, made not only by Germany but by the Allies. The diminution of bulk and weight have been the main considerations, and it will be discovered how far these factors are compatible with efficacy, convenience, economy, and durability.

RESPIRATORS.

WE have received from Messrs. Solport Brothers, of 188 and 190, Goswell-road, E.C., a model respirator which seems to be suitable for the present emergency among the troops and to fulfil the required conditions satisfactorily. The model (which has been submitted to the War Office) is called "Portia" No. 104, and is designed to be used wet, so as to cover the mouth and nose and absorb the deleterious gases. The towelling material used is specially absorbent, holding a considerable quantity of water, so that frequent renewal is not necessary, and at the same time it keeps perfectly porous so as not to impede the breathing. As a great advantage over the cotton-wool respirators it is claimed that the latter speedily become clotted into lumps after once or twice wetting and leave open patches through which the air is inhaled without proper filtration. The texture of "Portia" No. 104 respirators is said to remain uniform and constant, no matter how long the respirator is used or how frequently it is wetted.

THE PUBLIC SCHOOLS YEAR BOOK.

THE 1915 edition of this useful annual, edited by H. F. W. Deane, M.A., F.S.A., and W. A. Evans, M.A. (London: The Year Book Press. Pp. 774. Price 5*s.* net), now in its twenty-sixth year of publication, is the official work of reference to the Headmasters' Conference, and forms an admirable guide for parents and guardians seeking a suitable school for boys, giving, as it does, the names of the staff, with information as to mode of entrance, fees, prizes, scholarships, and so forth at the different public schools of the country. The sections dealing with the navy and army have been brought up to date.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 9.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 5th, 1915.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
April 29	30·090	E.	...	112	67	44	48	53	Fine
,, 30	30·090	E.	...	101	71	45	47	48	Fine
May 1	29·900	S.W.	...	110	67	48	51	58	Cloudy
,, 2	29·740	W.	0·02	102	59	46	47	50	Overcast
,, 3	30·184	E.	0·01	105	56	42	43	48	Cloudy
,, 4	30·020	E.	...	105	60	46	46	48	Overcast
,, 5	29·910	E.	...	101	71	48	52	56	Fine

The following magazines, journals, &c., have been received:—Canadian Medical Association Journal, Therapeutic Gazette, Practitioner, Journal of Mental Science, St. Bartholomew's Hospital Journal, South African Medical Record, Annales de Gynécologie et d'Obstétrique, Journal of Dental Science, Journal of Laryngology, Rhinology, and Otology, School Hygiene, British Journal of Children's Diseases, Candid Review, Dominion Medical Monthly, Journal of Royal Sanitary Institute, Canadian Practitioner, New Zealand Medical Journal, Medical Review, Archives of Internal Medicine, British Review, Middlesex Hospital Journal, Interstate Medical Journal, &c.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—4 P.M., Election of Fellows. Papers:—Elizabeth A. Fraser and Prof. J. P. Hill: The Development of the Thymus, Epithelial Bodies and Thyroid in the Vulpine Phalanger (Trichosurus Vulpecula).—Elizabeth A. Fraser: Some Observations on the Development of the Thymus, Epithelial Bodies and Thyroid in Phascolarctos, Phascolomys, and Perameles (communicated by Prof. J. P. Hill).—Mr. J. H. Brinkworth: Measurement of the Specific Heat of Steam at Atmospheric Pressure and 104·5° C., with a Preface by Prof. H. L. Callendar (communicated by Prof. H. L. Callendar).—Mr. C. F. Jenkin and Mr. D. R. Pye: Thermal Properties of Carbonic Acid at Low Temperatures. II. (communicated by Sir A. Ewing).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

THURSDAY.

SECTION OF NEUROLOGY (Hon. Secretaries—T. Grainger Stewart, H. Campbell Thomson): at 8 P.M.

Annual General Meeting.—Election of Officers and Council for Session 1915–1916.

Clinical Meeting.

Members who desire to show cases are requested to communicate as soon as possible with Dr. H. Campbell Thomson, 34, Queen Anne-street, W.

FRIDAY.

SECTION OF OTOLOGY (Hon. Secretaries—W. M. Mollison, E. D. D. Davis): at 5 P.M.

Annual General Meeting.—Election of Officers and Council for Session 1915–1916.

Clinical and Pathological Meeting.

Cases and Specimens:

Will be shown by Mr. Richard Lake, Dr. Dan McKenzie, Mr. C. E. West, and Mr. W. M. Mollison.

Dr. Dan McKenzie: Note on Mastoid Grafting.

CLINICAL SECTION (Hon. Secretaries—Thomas H. Kellock, David Forsyth): at 8 P.M.

Annual General Meeting.—Election of Officers and Council for Session 1915–1916.

SATURDAY.

SECTION OF BALNEOLOGY AND CLIMATOLOGY (Hon. Secretaries—Charles W. Buckley, J. Campbell McClure): at 12.30 P.M.

Annual General Meeting.—Election of Officers and Council for Session 1915–1916.

2 P.M., Leave the Society's house for visit to Epsom College, &c.; for details see special card.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8 P.M., General Meeting. Election of Officers and Council for 1915–1916 Session, &c. 8.30 P.M., Mr. D'Arcy Power: Short Demonstration on Early Books on Naval and Military Surgery from the Society's Library (illustrated by the epidiascope). Exhibition of a Selection of Some of the Society's Old and Rare Medical Works.

ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.

MONDAY.—8 P.M., Cantor Lecture:—Dr. D. Sommerville: Foodstuffs. (Lecture III.)

SOUTH-WEST LONDON MEDICAL SOCIETY, Bolingbroke Hospital, Wandsworth Common, S.W.

WEDNESDAY—9 P.M, Discussion on the Car in Medical Practice (opened by Mr. C. Ryall).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 11 A.M., Mr. Souttar: Demonstration of Minor Operations. 12 noon, Lecture:—Mr. Souttar: Abdominal Diagnosis. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M. Clinical Lecture.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

TUESDAY.—3 P.M., Prof. C. S. Sherrington: The Animal Spirits. (Lecture II.)

For further particulars of the above Lectures, &c., see Advertisement Pages.

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The Hunterian Lecture

ON

SOME INFECTIONS OF THE TONSILS.

Delivered before the Royal College of Surgeons of England on Feb. 19th, 1915,

BY FREDERICK C. PYBUS, M.B., M.S. DURH., F.R.C.S. ENG.,

HUNTERIAN PROFESSOR, ROYAL COLLEGE OF SURGEONS OF ENGLAND; SURGEON TO THE HOSPITAL FOR SICK CHILDREN, AND SURGICAL REGISTRAR TO THE ROYAL VICTORIA INFIRMARY, NEWCASTLE-ON-TYNE.

MR. PRESIDENT, LADIES, AND GENTLEMEN,—My first duty is to thank you for the honour you have done me by appointing me one of your Hunterian professors during the present year.

INTRODUCTION.

In selecting a subject for this lecture I was guided mainly by the fact that for some time I have been studying the pathology of the tonsils, and also because most questions relating to them have been for some time past under discussion. Some problems have been satisfactorily dealt with, others are in the process of elucidation, while there remain more which need much further investigation before definite opinions can be stated about them or any conformity of views reached. It seemed to me wise at the same time to review, as far as possible, the subject of tonsil infections. While some authorities consider that the tonsil is ruthlessly and unnecessarily sacrificed, others are tardy in recognising the part played by that organ as a focus of infection, and perhaps err in the opposite direction. I hope to be able to give some guidance in this matter, and quote the principles and results of my own practice.

ANATOMY.

The faucial tonsil which lies between the pillars of the fauces is the most complex part of the lymphoid tissue situated at the entrance of the alimentary canal. In structure it resembles a lymphatic gland, and is surrounded for the most part by a tough fibrous capsule, which is connected to the structures forming the pharynx by loose areolar tissue, except at its lower pole, where it receives its main vessels and has some muscular attachments. This capsule allows the tonsil to move on the pharyngeal wall and is a potent protection against the spread of infection. The remaining surface of the tonsil is exposed in the pharynx, its extent varying greatly in degree. From this pharyngeal aspect a pocket projects into the tonsil, which is in reality a hollow organ, this cavity being intracapsular and known as the tonsillar fossa. The pharyngeal aspect of the tonsil is covered by the same epithelium as the general surface, and is thrown into folds which surround numerous depressions or lacunæ; these extend through the lymphoid tissue, so that their blind extremities abut on the capsule. Certain folds of mucous membrane pass from the faucial pillars to the surface of the tonsil and may very considerably narrow the entrance to the tonsillar fossa. As the lymphoid tissue grows on the sides and folds, the fossa may be largely obliterated, and later the tonsil appears almost solid. In its commonest form the tonsil consists of an almost solid lower pole—containing narrow lacunæ, while the fossa lies above the level of the soft palate and is bounded by folds of lymphoid tissue. More or less of the tonsil may project beyond the inner border of the faucial pillars. As the tonsil enlarges it tends to project inwards, but it may remain entirely behind the anterior faucial pillar, and I estimated from an examination of 500 tonsils that only in 15 per cent. of cases did more project than remain hidden.

The main efferent lymphatic vessels pass from the tonsil to a gland belonging to the deep cervical chain, and situated below and behind the angle of the jaw in the interval between the internal jugular and common facial veins. Afferent lymphatics have not been demonstrated, but experiments by Lénárt, Henke, and others have shown that pigment injected into the nasal mucous membrane may be found after a short interval in the substance of the tonsil, and they suggest that such afferent lymphatics do exist.

The comparative anatomy of the tonsil investigated by Hett in this country, and whose specimens are present in the Museum, demonstrates that in successive grades of animals the tonsil increases in complexity from a mere depression lined by lymphoid tissue to the complicated arrangement found in the higher species. The lacunæ, at first solid columns of epithelium, break down and form cavities which remain throughout life. As we should expect, the tonsils most nearly corresponding to the human are those of the monkeys and anthropoid apes.

PHYSIOLOGY.

The tonsil, as already stated, forms part of the ring of lymphoid tissue which guards the entrance to the respiratory and digestive tracts. The exact nature of its function is difficult to determine, as extirpation of the organ, so far as can be discovered, causes no defect in the economy. No doubt its function can still be carried on by the remaining lymphoid tissue in the vicinity. As with adenoid tissue elsewhere it reaches its maximum growth in childhood and gradually atrophies as adult life is reached. The maximum activity is correlated to that time of life when infection is most frequent, as with the remainder of the lymphoid tissue, situated along the whole course of the alimentary canal. An examination of the tonsil shows it to have a similar structure to a lymphatic gland, and as such it is actively engaged in the production of lymphocytes. It may receive lymph from the nasal cavities and act as a filter and protecting agent in infections in this region. It has been shown that pigment granules injected into the nasal mucous membrane find their way into the tonsil and in some cases may be extruded from here on to the free surface. The lymphocytes also are constantly reaching the surface, where they mingle with the oral secretions. An examination of the contents of the lacunæ shows them to be occupied by lymphocytes, leucocytes, and organisms. Many of the latter are ingested and destroyed in the lacunæ, while in some cases they find their way through the epithelium—again to be received, in normal conditions, by leucocytes, where they are satisfactorily accounted for. This process may be studied by the application of carmine granules to the surface of the tonsils. There thus appears to be a constant stream of cells wandering to the surface of the tonsil and finding their way into the lacunæ and oral cavity, in which places they may act as phagocytes, not only to foreign particles but to organisms as well. There is no doubt that their function is protective and the tonsils enlarges temporarily beyond normal limits to deal with increased infection. In addition to this active defence, the lacunæ occupied by organisms of various nature, pathogenic and others, act as culture tubes, and it seems probable that under strictly normal conditions the epithelium is a sufficient protection against the entrance of organisms into the tonsillar tissue, but the balance is so delicate that it is frequently found that organisms do pass into the substance of the tonsil, where in the great majority of cases they are destroyed, and by this process of absorption of organisms or toxins the tonsils may act as immunising agents to the body as a whole.

There are some who ascribe some particular internal secretion to the tonsil, but the evidence for this is by no means conclusive. In summing up we may state that the tonsils may act as lymphatic glands for certain regions of the nasal cavities. They act also as a protection against the constant presence of organisms in this part of the pharynx—either in the mouth, lacunæ, or tonsil substance—should they reach it through some breach in the surface. It is also probable that in the exercise of this phagocytosis they confer some immunity against the organisms inhabiting this region.

BACTERIOLOGY.

The tonsils are subject to the presence of organisms during almost the whole of life, both on their surface and in the lacunæ which penetrate their substance. Under normal conditions no active invasion is apparent, but under the influence of local injury or lowered resistance infection takes place with effects of very varying magnitude.

The regular inhabitants of the mouth and throat may be found on cultural examination of the contents of the lacunæ. They vary in proportion at different times, and on occasions rarer pathogenic forms can be found or show their presence by causing some lesion. Dwyer, in an examination of 72 cases, found the following organisms present in health, the varieties ranging from 1 to 7 (Table I.).

TABLE I.—*Bacteriology of the Tonsils* (*Dwyer*).

	Cases.		Cases.
Streptococcus (various types)	50	Diplococcus mucosus capsulatus	4
Pneumococcus	14	Influenza bacillus	5
Staphylococcus	20	Pyocyaneus	1
Micrococcus catarrhalis	12	Friedländer's bacillus	1
Diphtheria bacillus (5 true type, 5 pseudo, 5 not determined.)	16	Spirillum	1
		Long curved bacillus	1

In pathological conditions the normal balance of varieties may be upset, while additional organisms may be present, such as (1) the bacillus of tuberculosis; (2) actinomycosis; and (3) bacillus coli. The most constant organism present, as is well known, is the streptococcus, and it can be found in nearly 100 per cent. of examinations. All the organisms above mentioned are capable of producing infection of the tonsil, though some may exist in contiguity with it throughout a lifetime and produce no harmful effect.

Active invasion of the tonsil may occur through the lymphatic channels leading from an infective condition of the nose. More often, however, the infection is from the surface and is determined occasionally by injury, but more often without any gross mechanical factor, it being dependent on an increased virulence of the organism or some lessening of the chemical defences of the body. The organisms are contained at the time in the secretions of the mouth or may be carried to the tonsil in food, such as will be shown to occur with the tubercle bacillus, or by air, especially in mouth-breathers. The organisms in the food may be forced directly into the lacunæ or may be carried in on some foreign particles, such as a fig-seed, which I have found on at least two occasions.

The lesion may be limited to the surface of the organ and be associated with a catarrhal condition of the rest of the pharynx. The invasion may then spread to various depths and become subepithelial, lacunar, or in the substance of the tonsil. From the tonsil spread is limited largely by the capsule, but infection may take place through this, either by means of the lymphatics or through some aperture, and so invade the cellular tissue, causing peritonsillar infection. Further spread passes to the lymphatic glands, and from here to the circulation, and may become widespread.

All forms of inflammation may subside completely and leave little trace of their presence. Fibrosis or suppuration may result in each situation. In some cases, as in other parts of the body, infection may not be entirely overcome and may show itself at irregular intervals during the whole life of a person, or the infection may become encapsulated, as in some of the tonsils exhibited.

The effect of organisms on the tonsil varies considerably, depending on the nature of the organism and length of time that infection has been occurring. It may have a stimulating influence and cause hypertrophy, this overgrowth being of such a nature that it subsides when the infection is overcome or removed. This enlargement may be followed by atrophy or the infected tonsil from the first may not enlarge; indeed, the smallest tonsil may be grossly pathological, and such disease may be entirely hidden from view, and can be judged only by its results on the lymphatic glands or rest of the body.

INFECTION.

Passing to consider some individual infections and their special manifestations, I need only mention that occasionally the tonsil is the focus of infection in syphilis and may be the seat of a primary chancre. It has been estimated that 10 per cent. of all extragenital chancres make their appearance on the tonsil.

ACTINOMYCOSIS.

The streptothrix group of organisms may gain access to the throat and in rare cases settle in the tonsils to such an extent as to form a recognisable lesion. This consists in the production of a granuloma which may ulcerate and infect the neighbouring tissues. This tendency to spread locally causes the tonsil also to be involved secondarily in the pharyngeal and buccal forms of the disease. When an extensive lesion is present it is impossible accurately to determine the exact point of origin.

Ruhrah, in an analysis of 632 cases, found that the head and neck were involved in 57 per cent. of the cases. Of 109 cases occurring in the United Kingdom during the years 1884–1906, the face and neck were involved in 50, and of these 2 were situated in the tonsil. In a systematic examination of 75 tonsils removed for hypertrophy and examined by Wright, one case of actinomycotic infection was found, the patient being a boy aged 12 years. Similar cases have been recorded by Ruge and Lesin, the former mentioning four cases, the latter one.

The organism gains entrance in the food-supply and may lodge in carious teeth, in the tonsils, or other parts of the mouth. It may be conveyed directly in grain, and two cases are reported where the husk of grain was known to have lodged in the tonsil a short time before the symptoms presented themselves. Johne also reports a case where he found a barley husk in the actinomycotic tonsil of a pig.

A more frequent source of origin must be looked for, however, as in other examples of actinomycosis, for a history of the ingestion of raw grain cannot always be obtained. Recent investigations have shown that the organism responsible for the disease occurs in milk, and it has been demonstrated that some cows considered clinically to be suffering from tuberculous udders were found on more careful examination to be affected with actinomycosis. Further researches are being carried out on this question.

The disease commences by a swelling which may be mistaken for an inflammation or sarcoma. Later ulceration occurs, with the discharge of pus containing the characteristic granules on which the diagnosis depends.

TUBERCULOSIS.

The tonsil is frequently the seat of tuberculosis; its situation is such that any bacilli entering the mouth and being swallowed pass over its surface and may gain entrance to the crypts, whether dust-borne in the air or in the food. The unfiltered air in mouth-breathers reaches this part directly, and the presence of tubercle bacilli in dust has been abundantly proved. An examination of sputa found on the ground was recently undertaken, and it was found that tubercle bacilli were present in 60 per cent. Of the food milk is probably the most important vehicle. Recent examination of the milk-supply of Edinburgh by Mitchell has shown that in 406 samples of milk from 406 shops tubercle bacilli were found in 82, or 20 per cent. The tonsil as the first part of the lymph system of the alimentary canal is frequently involved, but the remainder of the intestinal submucous lymph collections do not escape, and both lead to involvement of the neighbouring lymphatic glands.

The following table (Table II.) of results obtained by Dr. Stanley Griffith shows that the conditions can be produced experimentally. Feeding with tubercle bacilli infects the tonsil, and from here the cervical glands; in a similar way the same conditions are produced lower down—namely, infection of the lymphoid tissue of the intestine and mesenteric glands. This fact emphasises the importance of considering tuberculosis a generalised disease, and that if the tonsil is involved it is probable that there are similar and more extensive lesions in the alimentary canal.

TABLE II.

Species of animal.	Number fed.	Tonsils tuberculous.	Neck glands tuberculous	Intestines tuberculous	Mesenteric and colic glands tuberculous
Chimpanzees ...	7	1	4	7	7
Rhesus monkeys	7	1	4	7	7
Baboons	14	9*	11	13	13
Calves	21	3	5	16	20
Goats	9	1	5	2	8
Pigs	34	8	21	10	32
Total	92	23 (25%)	50 (54·3%)	55 (59·8%)	87 (94·5%)

* A tenth had a tuberculous ulcer on the pharyngeal wall with normal tonsils.

Frequency of Tuberculosis of the Tonsil.

The frequency of tuberculosis of the tonsil has been variously estimated. Amongst tonsils removed for hypertrophy and examined for this disease, the percentage varies about from 3 or 4 to 6, and Table III. gives the figures arrived at by different investigators. This percentage is probably too low, for in the first place the tonsil in this disease is often small, and the most reliable observations must be by a combination of methods, histological, cultural, and by inoculation. In grosser infections where the lung is involved, and in those dying from phthisis or from tuberculosis in other situations, the tonsil is much more often involved. The post-mortem record of those dying from phthisis shows that tuberculous infection is present in at least 90 per cent. of the cases (Table IV.). In tuberculosis of the cervical glands the tonsils can be found to be tuberculous in at least 30 per cent. of the cases (Table V.).

TABLE III.—*Examination of Hypertrophied Tonsils for Tuberculosis.*

Name.	Number.	Tuberculous.	—
Lermoyez...	32	5	Inoculation
Broca...	100	0	,,
Gottstein	33	4	,,
Pluder and Fischer	32	5	,,
Piffl	100	2	,,
Goure...	200	0	,,
Mitchell	90	9	,,
Latham	49	7	,,
Dieulafoy...	61	18	,,
Friedmann	54	1	,,
Total	762	51 (6·7%)	—

TABLE IV.—*Examination of the Tonsils in those Dying from Tuberculosis.*

Name.	Cases.	Tonsils tuberculous.	Death from phthisis.	Tonsils tuberculous.
Strassmann ...	21	13	15	13
Kruckmann ...	20	20	20	20
Walsham	34	20	20	20
Friedmann ...	40	17	—	—
Total	115	70 (60·8%)	55	53 (96·4%)

TABLE V.—*Showing Tuberculosis of the Tonsil in Tuberculous Cervical Glands.*

Name.	Cases.	Tonsils tuberculous.	Operation.	Post-mortem examination.
Carmichael	50	7	Yes.	—
Kingsford	17	7	—	Yes.
Mitchell	72	24	Yes.	—
Hurd and Wright	12	9	—	—
Total	151	47 (31%)	—	—

Tuberculous Lesions of Tonsils and Cervical Glands.

When settled in the tonsil the tubercle bacilli produce their characteristic lesion—the miliary tubercle—which may undergo fibrosis or caseation. The tubercles may be situated near the mouth of the lacunæ, round their circumference, or in the depths of the tonsil close to the capsule. The size of the infected organ varies considerably, most often it is enlarged and fleshy, in other cases small and shrunken. Unfortunately, there are no characteristic signs. The enlarged tonsil may be firm or unduly friable, or its substance may appear yellowish. In other cases it may contain a mass of caseous débris occupying a ragged cavity in the interior or a small chronic abscess surrounded by a firm capsule of fibrous tissue. The small tonsil may be fibrous and also contain a chronic abscess. Ulceration is rare; I have not yet seen a case in the child, but in the adult this sometimes occurs, usually late in the progress of the disease. Even when extensively diseased the capsule remains free and the tonsil can be readily dissected from its bed.

It is almost impossible to recognise the tuberculous tonsil clinically—its nature can only be suspected before removal, and on gross section after removal there is often considerable doubt. Its presence can be determined clinically, only by its effects—namely, infection of the cervical lymphatic glands. This lesion is undoubtedly the main importance of the tuberculous tonsil. In children affected with this condition, analysis shows that in 70 per cent. of the cases the tonsillar gland is involved, either alone or being the largest of a set occupying the side of the neck. From this gland the infection spreads to others situated around it, and may eventually involve the whole deep cervical chain. In rare cases the tonsillar gland overcomes the infection, while glands lower in the chain may caseate and form an abscess.

Unfortunately the tuberculous tonsil rarely causes symptoms apart from glandular infection. There is no pain, attacks of inflammation are rare, and appearances are normal. It is this which has so often led to the focus of infection in tuberculous cervical glands being overlooked. In some cases the glands become apparent and enlarged after a sore-throat, but even in these cases no secondary infection can be found in the gland. The tendency of the disease is towards natural cure, and the infection of both tonsil and glands may remain latent till adult or middle life is reached, when a tuberculous abscess appears insidiously in the region of the tonsillar gland. On evacuation of the abscess a small caseous or calcareous gland is found lying under the deep fascia which communicates with the abscess through a narrow opening.

Bovine and Human Infection: Preventive Measures.

The largest number of figures dealing with this infection of the cervical glands are those of Mitchell, whose results coincide with my own and whose figures I quote. In an investigation of the bacteriology of 72 cases of tuberculous glands from children in Edinburgh Mitchell found that the bacillus was of the bovine type in 90 per cent. and of human type in the remaining 10. The main tonsillar gland was involved in 50 cases of the above series, with secondary involvement of the surrounding glands in most cases. The tonsils in 64 cases were investigated, 24 of which showed histological tuberculosis. In experimental inoculation 19, or 30 per cent., of these gave a positive result, of which it was determined that bovine bacilli were present in 12 and human in three. Investigations in other parts give slightly different percentages, but the matter is being investigated at present in different localities for comparison with these results.

We have thus seen that the tonsil is readily infected with either form of tubercle bacilli, investigations showing that the bovine type is most frequently present in children (Table VI.).

TABLE VI.—*Examination of Tuberculous Glands to Determine Type of Tubercle Bacillus.*

Name.	Number.	Human.	Bovine.
Lewis	15	6	9
Litterer...	11	5	6
Burckhardt...	9	8	1
Weber	5	—	5
Park and Krumweide	54	34	20
Oehlecker	14	10	4
German Imperial Health Board...	3	1	2
British Tuberculosis Commission	9	6	3
Mitchell	72	7	65
Total	192	77 (40%)	115 (60%)

Although primary tuberculosis of the tonsil is not uncommon, it is unlikely to be the only lesion present. This infection of the tonsil has to be detected largely by its secondary effects on the lymphatic glands, as locally it rarely gives rise to symptoms. The treatment can be readily suggested from the previously mentioned facts. To prevent individual infection with the bovine bacillus at the present time it is essential that all cows' milk should be sterilised or should be obtained from healthy cows, those tested and found to be free from tuberculosis. The development of social legislation enforcing a pure milk-supply, which is urgently needed and which is gradually being met, will obviate the necessity for boiling milk. The potency of this mode of infection can be realised by the experiments of Delépine, who has found that one part of milk is capable of infecting 100,000 parts in sufficient degree to produce tuberculosis in guinea-pigs, so that it may be argued that the milk from a single cow with a tuberculous udder is capable of infecting the milk from a whole herd.

The preventive measures against human infection are being gradually adopted at present—namely, by isolating as far as possible the advanced cases of phthisis and the education of these people in the proper care of their sputum. When the lesion is suspected or manifest in the individual the treatment is to remove the tonsils entire in their capsule. The usual indication for this is tuberculosis of the tonsillar cervical glands. The tonsil as the focus should be removed as early as possible, except where softening or abscess formation in the glands demands that they should be dealt with first.

(*To be concluded.*)

SOMERSET INSURANCE COMMITTEE.—At the last meeting of the Somerset County Insurance Committee it was reported that 31 medical men in the county were on active service, and of these 26 were "on the panel." The chairman (Mr. J. C. Morland) stated it was quite probable that more medical men would be called away, and there might be difficulty in getting the usual prompt attention in some districts, but under the circumstances he was sure that insured persons would give every consideration for these difficulties, and he was also certain that they could rely upon the doctors left in the county to do their utmost to carry on as full and efficient a medical service as possible.

A CASE OF

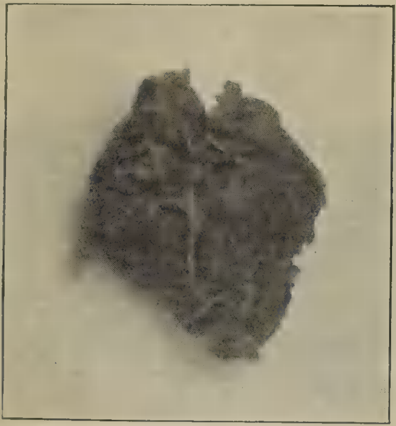
PERITHELIOMA OF THE SUPERIOR MAXILLA AND ETHMOID.

BY G. H. LAWSON WHALE, M.D. CANTAB., F.R.C.S. ENG.,
SURGEON FOR DISEASES OF THE THROAT, NOSE, AND EAR TO THE HAMPSTEAD GENERAL HOSPITAL, AND TO THE LONDON TEMPERANCE HOSPITAL.

THE patient, a female Belgian refugee, aged 52 years, came to the Hampstead General Hospital in September, 1914, with a lump in the right cheek of three and a half years' duration. The whole right upper jaw bulged outwards, pushing the nose over towards the left. There was no depression of the palate; the temporal fossa and post-nasal space were free. The right eye was proptosed, but vision was perfect; the outer wall of the right nasal fossa was pushed inwards against the septum. Examination by transillumination and puncture revealed a solid tumour. There were no palpable glands.

Under chloroform I incised the friable outer antral wall beneath the cheek, my intention being to remove a piece for histological diagnosis. But the bulk of the tumour came away so easily that I removed all I could, a mass larger than a golf-ball. (Fig. 1.) It was, however, impossible by this route to get any instrument or finger beyond the upper pole of the tumour, so it was obvious that, for a cure, this proceeding had been unsurgical and insufficient. An extract from the pathologist's report says:—

FIG. 1.

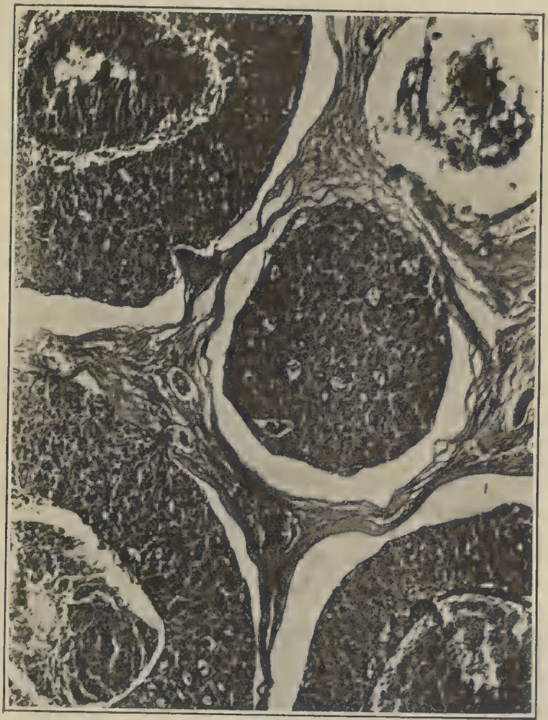


The mass of growth which was removed by elevating the cheek at the first exploratory operation. About two-thirds actual size.

> Richly cellular, irregularly circular areas present internally a roughly circular space filled with blood corpuscles. Bounding the space externally, and the cellular area internally, is a layer of flattened cells, suggesting the internal lining epithelium of a vessel. External to this are many closely packed ovoid cells, with a well-defined nucleus, arranged concentrically around the lumen. These appearances suggest a perithelioma originating in the small blood-vessels. (Fig. 2.)

A week after exploring the antrum I went to France, and so lost sight of the patient; on my return in January, 1915, I again saw her. The mass had not recurred in the outer antral wall, from where I had formerly removed the large piece, but the palate was slightly depressed on that side; the eye more proptosed and pushed outwards; the nose further displaced to the left; and a large, irregular, hard prominence extended from the middle of the cheek, upwards and inwards, crossing the inner canthus to reach the nasion. (Fig. 3.) A skiagram taken by Mr. C. Thatcher shows that the lower part of the antrum and the frontal sinuses were apparently free, but a shadow occupied the upper part of the jaw, side of the nose, and ethmoid region.

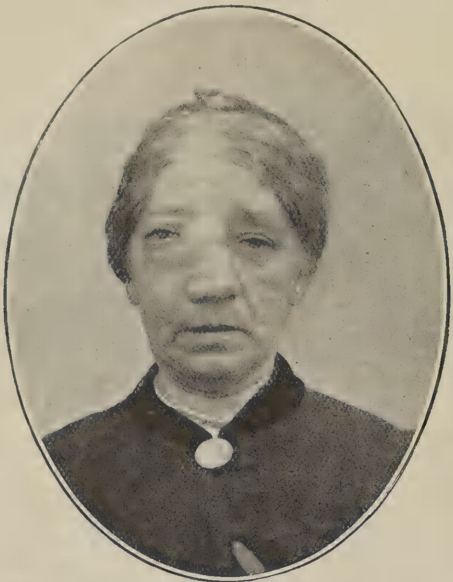
FIG. 2.



Microphotograph showing section of perithelioma of the right antrum and superior maxilla. Magnification 200 diameters.

Operation.—Ten days after the extraction of all the teeth, except those in the affected upper jaw, intratracheal ether was given by Mr. C. H. C. Visick. Dr. J. Z. Truter assisted. No preliminary tracheotomy or laryngotomy was performed, but the right external carotid was tied. An incision was then made, beginning in the middle of the eyebrow, in the line of which it was continued mesially to the root of the nose; then downwards in front of the lacrymal sac, and back to the sulcus between the nose and cheek; from here down to the junction of the nostril and cheek, horizontally inwards to the columella, and vertically downwards, dividing the lip in the mid-line. From a point in the first incision just below the lacrymal sac another curved horizontal incision was made in the line of the bony infra-orbital margin on to the malar prominence. These incisions are simply the classical one of Fergusson plus a prolongation half-way along the eyebrow. The usual large flap could now be turned down to expose the maxilla; and the skin over the root of the nose and inner half of the eyebrow could be raised upwards and to the left, for the better inspection of the ethmoid and frontal sinuses. The whole right upper jaw, palate bone, nasal bone, and part of the malar were now removed in one mass. (Fig. 4.) For cutting through the malar bone into the spheno-maxillary fissure a Gigli saw was used; for dividing the hard palate a keyhole saw. Elsewhere all separations were effected with a knife or bone-cutting forceps. It was not possible to leave the orbital floor or periosteum, as both were invaded. The "suspensory ligament" of the globe was not encountered—the eye rested on nothing but the orbital fat. The growth had invaded the right ethmoid, which, with the lacrymal bone, was now entirely removed up to the cribriform plate. The sphenoidal sinus and spheno-maxillary fossa were found to be free from disease. The attachment of the superior oblique pulley was not interfered with, and the soft palate was left. The cavity was swabbed everywhere with solution of zinc chloride, 40 grains to the ounce. The skin flaps were replaced and sewn up, and for 48 hours the cavity was kept plugged with wide ribbon gauze.

FIG. 3.

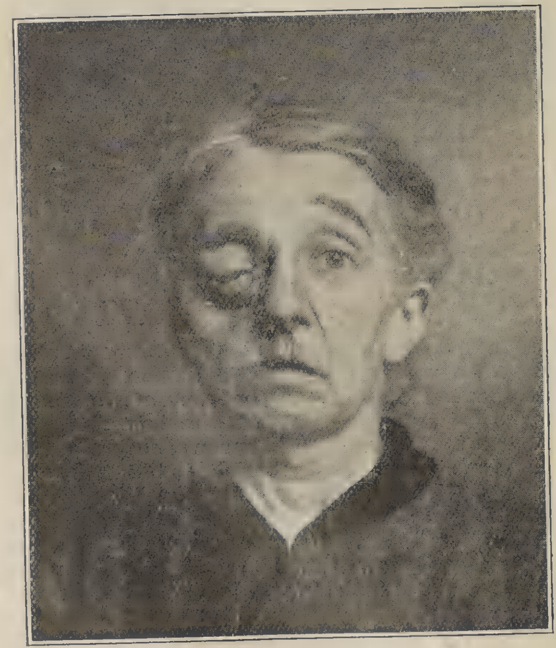


Appearance of the patient four months after first and shortly before second operation.

FIG. 4.

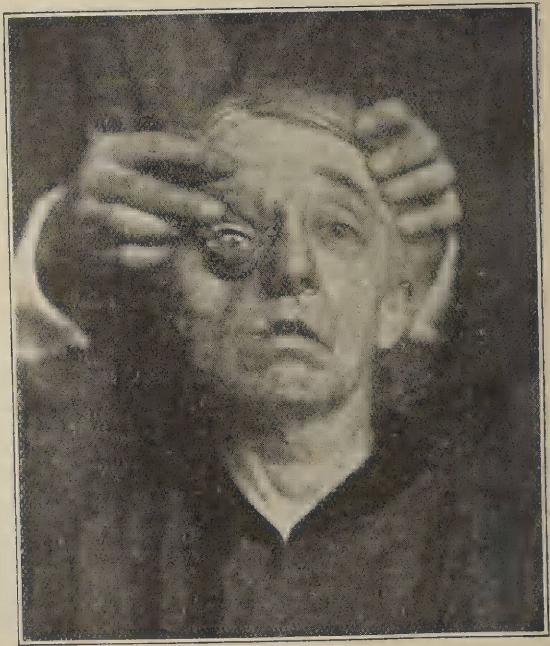
The upper jaw and adjacent bones removed at the second radical operation. The growth has rendered the identity of this unrecognisable, were it not for the teeth. About two thirds actual size.

FIG. 5.



Patient after operation. Shows the ptosis and inability to raise the eyebrow on the affected side.

FIG. 6.



Shows how the globe has dropped, but there is no diplopia.

Subsequent history.—Never at any time did the temperature exceed 99·8° F. nor the respirations 24. On the third day a marked conjunctival chemosis appeared. This was attributed to the great mechanical circulatory and lymphatic interference; and a leech on the upper eyelid cured it. But on the fifth day it reappeared, and simultaneously a brawny semi-fluctuating swelling was found over the right cheek, just in front of the ear. Incision evacuated from this an ounce of the foulest pus I have ever smelt; all the while the temperature, &c., remained normal. The chemosis now gradually disappeared. As the union of the incisions became complete, and before removal of the stitches, the skin for an area of 1 in. by ½ in., at the apex of the flap, just below the inner canthus, sloughed. Whether or not a plastic operation be undertaken later to close this opening, it has meanwhile provided a most convenient route through which to irrigate the upper part of the cavity. The eyebrow incision divided part of the origin of the levator palpebræ superioris and anterior belly of the occipito-frontalis muscles. Hence there are partial ptosis and inability to raise the eyebrow on that side. (Fig. 5.) An obturator with dental plate is being made under the direction of Mr. J. F. Colyer.

A curious feature of the case is that, although the eyeball has dropped a little, there is perfect vision with either eye separately (proving that both eyes are used), and no diplopia when using both eyes (Fig. 6); presumably an unconscious overaction of the intact extrinsic muscles compensates for the displacement of the globe. The photographs, which are published with the patient's consent, were kindly taken by Mr. J. W. Harrison; and the microphotograph (Fig. 2) by Mr. A. Cornell, of Tonbridge, with the super-microscope, without an enlarging camera, the invention of Mr. F. Davidson, 29, Great Portland-street, London, W.

Harley-street, W.

SPINAL ANÆSTHESIA IN 43 SUPRAPUBIC PROSTATECTOMIES.

BY H. M. PAGE, F.R.C.S. ENG.,
ANÆSTHETIST TO GUY'S AND THE WEST LONDON HOSPITALS.

I HAVE found spinal anæsthesia of great assistance in many genito-urinary operations, such as malignant disease of the bladder, lithotomy, some cases of lithotrity, extensive perineal fistulæ, &c., but in this paper I have only included suprapubic prostatectomy. A report on this one particular operation—performed, as it always is, on men who are all of advanced or great age, and in many instances suffering at the time of operation from the same kind of constitutional complications—is of a greater value for the comparison of spinal with general anæsthesia than if different operations, ages, conditions, and diseases had been included.

The victim of enlargement of the prostate gland is not only frequently of great age, but often presents evidence of organic degeneration, such as inadequately acting renal tissue, degeneration of the vascular system, emphysema, and bronchitis. The question of anæsthesia may therefore present a serious problem both as to the immediate result and ultimate recovery.

The commonest causes of death following suprapubic prostatectomy are shock and hæmorrhage, suppression of urine, pulmonary complications, and paralytic distension of the bowel.

From my experience in the administration of both general and spinal anæsthesia for this and many other kinds of operations I have come to the following conclusions. General anæsthesia administered for prostatectomy, which during the enucleation of the gland must be deep enough to relax the abdominal muscles, does not prevent shock. It tends rather to increase the amount of hæmorrhage if ether be the drug employed, and the risk of the supervention of urinary and intestinal complications: possibly it tends to increase pre-existing pulmonary troubles. Successful spinal anæsthesia, however, practically prevents shock, and even in cases where the spinal block is not perfect the operative shock is greatly diminished. The risk of the supervention of suppression of urine is smaller. This is principally due to the fact that the patient can be given fluids and stimulants by the mouth much sooner than after general anæsthesia, and partly to the absence of the effect of the general anæsthetic drug on the cellular tissues of the body. Any pre-existing pulmonary troubles are less likely to be increased. I may also add, as I cannot give an opinion on the subject myself, that a surgeon, who has used both general and spinal anæsthesia in a large number of prostatectomies, tells me that though distension of the bowel may occur after either, he considers it occurs less frequently after spinal anæsthesia.

The mental shock which some patients experience, due to being conscious during the operation, is, I am sure, a matter to be seriously considered. Fortunately this can be eliminated without practically losing any of the advantages claimed for spinal anæsthesia. Nitrous oxide and oxygen can be given during the operative interference, and in the absence of reflex stimulation this is comparatively easy. Personally I should always recommend the administration of these gases if the patient expressed a wish for unconsciousness or showed signs of nervousness.

The method I use is as follows. A previous subcutaneous injection of morphia or omnopon and atropine with or without scopolamine is given. I inject in the second lumbar space in the middle line with the patient lying on his side, using Barker's needles and his internal cannula. The drug used in all these cases was novocaine. In the first 21 cases I used a solution weighted with mannitol. I have given up using weighted solutions altogether. In the last 22 cases the unweighted 5 per cent solution with suprarenin borate, as made by the Saccharin Corporation, was used. The dose of this last solution for these cases varies from 2 to 2½ c.c. according to the age, size, and condition of the patient. Raising the buttocks slightly and flexing the thighs on the abdomen immediately after the patient is turned on to his back tend to raise the height of the anæsthesia even with unweighted solutions of novocaine or stovaine. The head is, of course, kept slightly raised at the same time.

The advantages I would claim for the use of the unweighted solution, instead of the solution purposely made heavier than the spinal fluid, are as follows. Temporary collapse is met with in a certain proportion of cases after intrathecal injection of any of the drugs used to produce spinal anæsthesia. Should this occur it can be treated by raising the patient's legs and lowering his head, and this is the most rapidly effectual treatment. With the use of this solution the foot of the bed can be raised on blocks immediately the patient has been put back there, and if he has to be carried up or down stairs after the operation this can be done with the head dependent.

In the cases reported here no failure to obtain muscular relaxation or analgesia occurred. Anæsthesia, though slow to appear in 3 cases, was perfect eventually in 41 cases out of the 43; in the 2 others there were muscular relaxation and analgesia of the bladder. 34 of the cases were operated on without any general anæsthesia. Nitrous oxide and oxygen were given to 4 cases for prevention of mental shock, the spinal anæsthesia being perfectly good. In 3 cases a little general anæsthesia was given during the skin incision, after which it was withdrawn and no more given. These 3 patients were completely conscious when the skin was being stitched up at the end of the operation. The skin was then completely insensitive; therefore they were cases in which the anæsthesia came on more slowly than usual. In 2 other cases a little general anæsthetic was given during the skin incision and stitching up only, none being given during the opening of the bladder or enucleation, muscular relaxation and bladder analgesia being present.

Personally I should advise anyone beginning to use this method to aim at getting anæsthesia with the minimum dose of the drug likely to produce it in the particular case, and to risk having to give a very little general anæsthetic to supplement it.

The ages of the patients in this series were—

1 case aged 94 years	Recovered.
1 ,, ,, 90 ,, ...	,,
4 cases over 80 ,, ...	All recovered.
14 ,, between 70 and 80 years... ...	,, ,,
20 ,, ,, 60 ,, 70 ,, ...	1 died.
3 ,, ,, 50 ,, 60 ,, ...	1 ,,

In a large majority of the cases I was asked by the surgeon to give spinal anæsthesia for special reasons, such as great age, vascular degenerations, low specific gravity of urine, emphysema, and bronchitis. Personally, therefore, I should claim this series, from the point of both surgeon and anæsthetist, as a test of average recovery to be rather an exacting than a favourable one. Of these 43 cases 41 recovered, the abdominal wound being healed and the urine passed naturally by the urethra. Two cases died.

1. Patient aged 65. At the time of operation he was suffering from uræmia. He recovered normally from his spinal paralysis and was no worse at the end of the operation than before, and remained no worse for two days, when vomiting and diarrhœa came on. The post-mortem record says: "Secretory tissues of kidneys practically non-existent."

2. Patient aged 53. He recovered normally from the spinal injection and operation. Did perfectly well for ten days, when an attack of acute lobar pneumonia (P.M.) came on and he died in a few days.

These two cases have no bearing on the question of anæsthesia. The first, as a rule, would have been a suprapubic drainage only and therefore not have got into statistics as to prostatectomy at all. The second was an accident occurring in a most favourable case for prostatectomy, and occurring too late after the operation to have anything to do with the question of anæsthesia, whether spinal or general. I have included them as I have here given all the cases in which I have used spinal anæsthesia for this operation.

There was no case of permanent sequela following the spinal injection. There are here 41 complete recoveries out of 43 cases. Taking into consideration the causes of death of the two cases that died, I would suggest that this is really a better average recovery than it appears.

I am particularly indebted to Mr. John Pardoe for being able to make this report, as the very large majority of the cases were his, including the patient aged 94, and I take this opportunity of thanking him for his help and encouragement. Neither of the two cases that died was his. My thanks are also due to members of the staff of Guy's and the West London Hospitals who have given me cases.

Welbeck-street, W.

A NOTE ON

TUBERCULIN ADMINISTRATION AND GRADUATED LABOUR.

By EDGAR TAUNTON, M.B. Lond., F.R.C.S. Eng.,
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Patients admitted to the Royal National Hospital, Ventnor, undergo the ordinary open-air sanatorium treatment with rest or systematically graded exercise according to the state of the case. A part of the accommodation of the hospital (about a fourth) is, however, set apart for prolonged treatment of selected cases by a course of graduated labour. After selection these patients are on probation for a period of not less than four weeks, and if that term is passed satisfactorily they are taken in as "workers" to the special working blocks, where they remain until they leave the hospital.

Tuberculin has been carefully administered in some of the most promising of these selected "workers" by the intensive method, either "B.E." or "T.R." Slight reactions were occasionally observed. In the rare cases of prolonged reaction the use of tuberculin was discontinued.

It has seemed desirable to the medical staff of the hospital that some definite opinion should be arrived at as to the value of tuberculin in such cases (*a*) in shortening the duration of treatment; (*b*) in increasing the ability to do work; (*c*) in improving the general nutrition; and (*d*) in ensuring better after-results. For this purpose an examination of the records of 300 patients who passed through the "working blocks" between April, 1912, and March, 1914, has been made and the after-histories of about 60 per cent. of these cases have been with some difficulty obtained.

The course of graduated labour is for convenience divided into five grades of work, but in practice there is no abrupt transition from grade to grade, and it might be more nearly accurate to speak of ten or more grades, the point to grasp being that it is not a rigid system but a flexible one, adaptable to the needs of individual cases under constant medical direction and supervision.

Disturbances of temperature are a matter of prime importance in any consideration of the progress and treatment of cases of pulmonary tuberculosis, and here they have to do with the following. 1. The primary selection of cases for the working blocks. 2. The result of the probation of selected cases. 3. The further selection of patients for tuberculin administration is determined by the absence of such disturbances. 4. Ability to do work and the rate of progress from grade to grade of work are in relation to their absence or occurrence. 5. The duration of treatment itself is very largely a question of the absence of such disturbances and of their extent and duration when they occur. They involve rest, the cessation of work while they last, interruption of the course of graduated labour, and loss of time. The introduction, therefore, of a possible disturbing factor like tuberculin administration has to be justified by results or its employment is unwarranted.

Gain in weight if taken as an index, not as a measure, of improved nutrition is a sensitive and fairly reliable guide if considered along with other things such as the grade of work. As the observations are systematically taken their evidence is included.

After-results.—It can be stated without fear of contradiction that the object of treatment in sanatoriums is not so much for patients to be able to live in a sanatorium as that they should be able to live and work outside, and that the true estimate of results must have regard to these after-histories. It has also been suggested in the course of this inquiry that a true estimate of the value of tuberculin should be based upon these after-histories rather than upon the relatively short views of results by the time of leaving.

Analysis of cases.—Of 300 patients dealt with 71 were women workers and 229 men workers. Of the women 34, or 74 per cent., were given tuberculin, while of the men 44, or 19 per cent., had tuberculin.

Duration of treatment.—Women: (*a*) The average period of residence of the 34 women who had tuberculin was 202·4 days; (*b*) of the 37 women who had no tuberculin, 148·1 days; (*c*) the average increase in the duration of treatment required for tuberculin cases was 54·3 days, or an increased duration of treatment of 36·6 per cent.; and (*d*) in relation to the stadia of the disease the increased time required where tuberculin was used was as follows: Stadium I., 43·4 per cent.; Stadium II., 28 per cent.; and Stadium III., 33·8 per cent. Men: (*a*) The average period of residence of the 44 men who had tuberculin was 144·7 days; (*b*) of the 185 men who had no tuberculin, 125·2 days; (*c*) the average increase in time for tuberculin cases was 19·5 days, or an increased duration of treatment of 15·5 per cent.; and (*d*) in relation to the stadia of the disease, Stadium I. took 14·9 per cent., Stadium II. 22·4 per cent., and Stadium III. 11·7 per cent. longer treatment than those of the same stadia who had no tuberculin.

Ability to work.—The ability to do work has been estimated first according to the average grade of work reached while under treatment. This, however, required to be associated with the duration of treatment to give a true comparison. There is therefore also given a comparison of the average increase in grade of work per diem. Women: (*a*) The average grade of work reached by the 34 women who had tuberculin was 1·82, while that of the 37 women who had no tuberculin was 2·25, or 23 per cent. higher; and (*b*) the women who had no tuberculin showed in the average daily increase in grade of work the following percentage excess compared with those who had no tuberculin: Stadium I., 75 per cent.; Stadium II., 44 per cent.; and Stadium III., 61·2 per cent. Men: (*a*) The average grade of work reached by the 44 men who had tuberculin was 3·30, and that of the 185 who had none 3·61, or 9·39 per cent. higher; and (*b*) the men who had no tuberculin had daily excess increases in the grade of work in Stadium I. of 31 per cent., in Stadium II. of 27·1 per cent., and in Stadium III. of 29·1 per cent. compared with those of the same stadia who had tuberculin.

Gain in weight.—Here also the total average needs supplementing by data as to gain in weight in relation to duration of residence, and the mean daily gain is therefore given to enable a true estimate of progress to be made. Women: (*a*) Average gain in weight in 37 women without tuberculin, 11·9 lb.; in 34 women with tuberculin, 6·8 lb.; the increased gain without tuberculin thus equalling 5·1 lb., or 75 per cent. (*b*) Average daily gain without tuberculin in excess of those with it: Stadium I., 122·7 per cent.; Stadium II., 108·3 per cent.; and Stadium III., 100 per cent. Men: (*a*) Average gain in weight in 185 men without tuberculin, 13·5 lb.; in 44 men with tuberculin, 12·09 lb.; the increased gain without tuberculin being 1·4 lb., or 11·6 per cent. (*b*) Average daily gain without tuberculin in excess of those with it: Stadium I., 51·6 per cent.; Stadium II., 29·8 per cent.; and Stadium III., 3·8 per cent.

After-results.—As the result of inquiries sent to all of the 300 patients whose cases are under consideration 189 returns were sent in—61·6 per cent. of the cases treated with tuberculin ("T." cases), and 63·2 per cent. of those treated without it ("N.T." cases). The deaths recorded were not markedly different in the "T." and in the "N.T." groups—viz., 8·3 per cent. for both in women, and 12·8 per cent. "N.T." men and 16 per cent. "T." men. The chief difference was in accordance with what might have been anticipated from the progress of these cases in the hospital. Among the "N.T." cases 79·1 per cent. of the women and 71·1 per cent. of the men were reported as "able to do their work," while of the "T." cases only 50 per cent. of the women and 56 per cent. of the men could do so. To put it another way, adding together the men and women, while of the "N.T." cases 26·9 per cent. were unfit for work or dead, of the "T." cases 46·9 per cent. were so conditioned. Upon dividing the cases into two groups—viz., those who left in the first, and those in the second half of the period—a similar difference in the after-histories in favour of those who had had no tuberculin was found in each of the groups taken separately.

Summary.—The answers which the medical staff of the hospital sought to elicit from a consideration of these cases are given for these cases, and, under the conditions mentioned, with sufficient clearness to enable a definite opinion to be formed: 1. The administration of tuberculin to selected phthisical workers does not shorten, but, on the contrary, it lengthens, the duration of treatment. 2. The use of tuberculin does not increase the ability to do work. It appears not only to delay the improvement in working ability, but it also diminishes the ultimate ability achieved by a more prolonged course of treatment. 3. So far as gain in weight and the rate of gain enable one to judge, the administration of tuberculin is detrimental to the nutrition of patients to whom it is given under these conditions. 4. The after-results in fitting patients to do their work after leaving the hospital in these cases are less favourable where tuberculin has been used than in the cases where it has not.

Tidworth.

CROWNHILL CONVALESCENT HOME, NEAR PLYMOUTH.—The annual meeting of the subscribers to this home was held recently under the presidency of Earl Morley. The medical report stated that during 1914 the patients admitted numbered 236. Lieutenant-Colonel A. B. Soltau, the honorary physician, being away on war service, the duties had been performed by Dr. E. Lawrence Fox. The financial statement was satisfactory.

REPORT ON A FEW CASES ILLUSTRATING THE REMOVAL OF FOREIGN BODIES ON THE X RAY TABLE.

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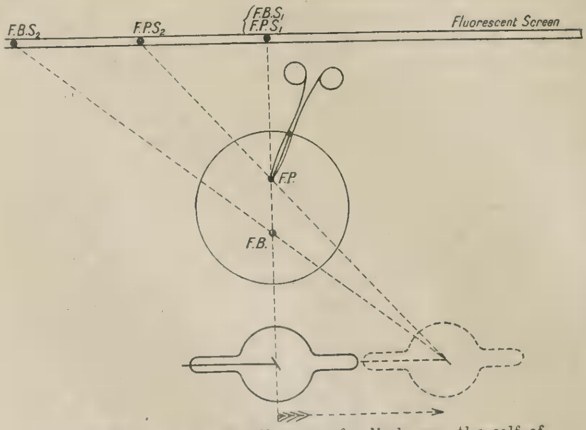
IN a recent article on this subject[1] the more routine adoption of a method of removing foreign bodies under the direct guidance of the X rays was advocated. A description in brief of the method employed at the Baltic and Corn Exchange Hospital, Calais, was then given, and it has occurred to us that an account of a few cases might add to the value of the communication.

For the benefit of those who have not given the subject of radiography special attention it may be well, as a preliminary, to recapitulate a few facts concerning the rough localisation of foreign bodies in situations not demanding precise and detailed measurements. In our recent article we have stated that it is possible to obtain much information during the course of a surgical operation performed upon the radioscopic table by a slight movement of the X ray tube. Let us suppose that a foreign body in the calf is to be removed. The object is first "centred." The incision is made directly over it, or as nearly so as is consistent with a safe approach. The skin, superficial fascia, and deep fascia are divided, and then the light is turned off and the X rays switched on. Guided by the screen, closed pressure forceps are pushed a little way into the tissues towards the foreign body. The tube is now moved to one side and the relative movements of the shadows cast respectively by the foreign body and the point of the forceps noted. Should the former seem to move farther than the latter then the forceps have to be pushed still deeper. The reason for this will be readily understood by reference to this simple and self-explanatory diagram. (Fig. 1.)

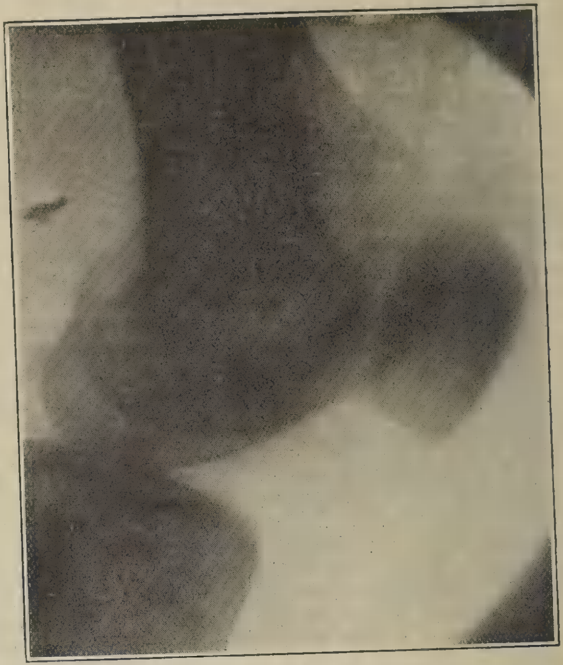
FIG. 1.



The circle represents the diagram of a limb, say, the calf of the leg, in section, in which F.B. represents the foreign body and F.P. the forceps point. Then F.B.S. and F.P.S. represent the shadows respectively of the foreign body and the forceps point on the fluorescent screen when the tube is situated vertically under the foreign body. When the tube is moved to one side in the direction of the arrow the corresponding shadows are represented by F.B.S.$_2$ and F.P.S.$_2$

In the removal of minute foreign bodies the greatest difficulty is sometimes experienced; and while, in many cases, these may be well left alone, yet it sometimes occurs that it is most advisable to remove them. Of this nature is the case that follows. (Fig. 2.) A private of the 2nd Chasseurs à pied was wounded at Dixmude on March 17th by a small piece of bullet mantle, probably from a ricochet. There was a punctiform wound in the outer side of the left thigh four inches above the patella. As the radiogram shows the sharp metallic fragment which caused it had penetrated deep into the popliteal space. An incision was made in the line of the tendon of the semitendinosus, and dissection was carried on until the popliteal vessels were displayed. The dissection towards the fragment was guided by frequent screening; but, of course, none was done under the rays, except the final extraction of the minute projectile. The artery having been recognised by sight and being kept under the finger when the rays were switched on, a pair of closed forceps was introduced and gently pushed through soft tissue till the fragment was reached. The foreign body, which was sticking in the sheath of the popliteal artery, was then gently grasped and removed. There was no after-trouble.

FIG. 2.



Showing a small foreign body in the sheath of the popliteal artery.

The minuteness of the foreign body makes the case seem almost trifling, yet the consequence of the presence of such a sharp metallic fragment in the proximity of the artery might have been very serious.

Again, minute foreign bodies may act as sequestra and prevent healing, as in the case illustrated in Fig. 3. The patient was a cyclist of the 1st Carabiniers and was wounded, eight days after the war began, at Warumme, near Liége. He was taken to the Red Cross Hospital there, and carried thence in the retreat, first to Louvain and then to Ghent, where he was operated upon; then to Ostend, to Duinbergen; then to England, to Hastings, where he was operated upon for the second time; then back to his depôt in France, whence, on March 19th, he was sent to us for his third operation. He had pain which incapacitated him in his left lower leg. The old operation scars ran vertically upwards from behind each of the malleoli. There was a dry sinus in that over the tibia. The operation consisted of incisions upwards in the lines of the old ones and removal of the metallic fragments under the X rays. One piece was found lying at the bottom of the sinus, and after it was extracted the sinus itself was carefully excised. Both wounds were sutured without drainage and healed by first intention, and the patient was discharged a fortnight after admission, cured.

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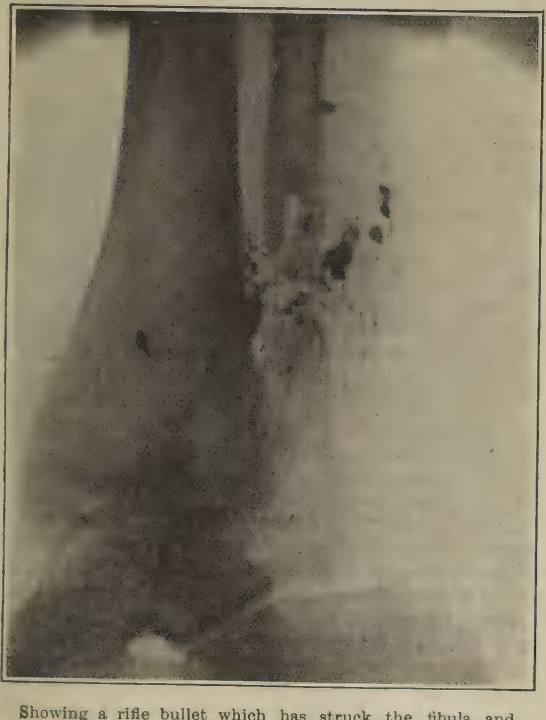
[1] THE LANCET, April 24th, 1915, p. 854.

The most difficult cases are those in which a foreign body lies embedded in muscular tissue without any intimate relation to bone. The region is, as it were, uncharted. Plates demonstrating such cases are at the Baltic Hospital rarely taken, as the projectiles are removed on the X ray table without any more ado; but our view as to the difficulty is supported by the number of such patients we have had sent to us showing large operation scars following a prolonged but fruitless search. By the direct method of operating the possibility of working along the wrong muscular plane is obviated and difficulties are reduced to a minimum.

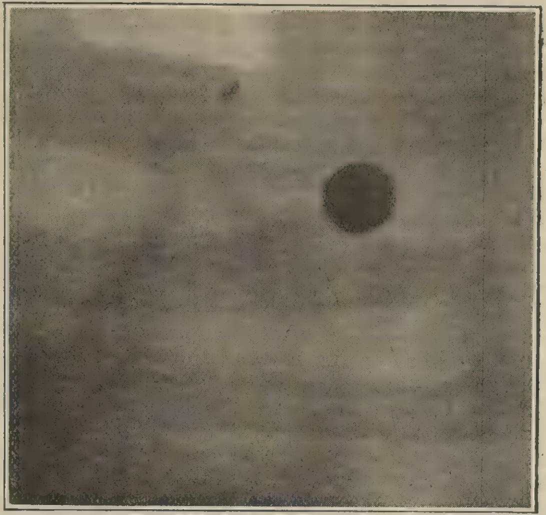
FIG. 3.



Showing a rifle bullet which has struck the fibula and exploded into minute fragments. (Longmore quotes Busch to the effect that rifle bullets on striking bone may "actually become melted and divided into numerous slug-like particles, and that this adds greatly to their destructive effects in wounds.")

A lame convalescent returned to hospital will serve as an example of the trouble caused by a bullet lying deep in muscles, even though the wound may have healed. He was wounded in the back on Oct. 22nd of last year and received treatment at two hospitals in England, but the bullet was not removed at either. On his return to the front he was unfit for duty owing to pain on walking. He also described a loss of sensation over the front of his left thigh. On account of these symptoms he was sent to us for extraction of the foreign body. A stereogram, not reproduced, showed a bullet pointing downwards lying deep in the muscles of the back on the left side in the angle between the iliac crest and the vertebral column. At the operation a small longitudinal incision was made at a somewhat higher level than the situation of the bullet. The reason for making it there was to allow of the base of the bullet being grasped. The tendon of the latissimus dorsi was cut in the line of the first incision and the fibres of the erector spinæ were exposed. Guided by the rays these were split with blunt forceps, and the bullet, which was lying deep in the muscle, was grasped and extracted. The whole operation, as is usual, was only a matter of a few minutes. The patient was discharged a few days later free from pain and healed.

FIG. 4.



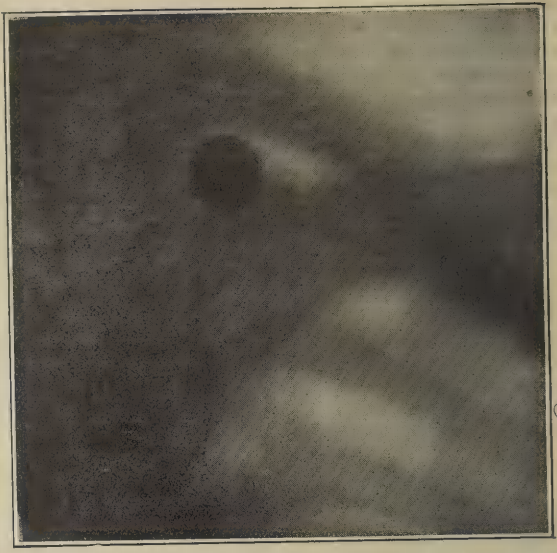
Showing a shrapnel ball (embedded in callus) that had been lying for four months *in situ*—viz., between the third and fourth ribs and on the pleura. It caused pain and incapacity and was removed by operation under the X rays.

The wide sphere of usefulness of "the direct method" is shown in the following three cases. In Fig. 4 a shrapnel ball is seen lying between the third and fourth ribs. The patient, who had been wounded four months previously at the battle of the Yser, was admitted here on Feb. 18th of this year. He complained of pain in movement of the right shoulder, but there was no shoulder lameness. There was a small scar in the posterior axillary fold about the level of the sixth rib. This had been the wound of entrance. The radiogram shows two things. One is the shrapnel ball between the ribs, four centimetres from the mid-line, and the other is that the fourth rib was broken and comminuted. Evidently the ball had passed slightly upwards through the axillary fold and between the scapula and ribs, grazing and breaking the fourth, and lodging in the space above it. Subsequently it was found that it had penetrated deeper, for it had passed forwards between the ribs and lay just on the pleura. At the operation, the arm being pulled up and out to get the scapula out of the way, a long vertical incision, four inches, was made through skin and fascia and also through the tendon of the trapezius. The subjacent muscles, the rhomboideus major and then the erector spinæ were split in the line of their fibres and well retracted. Then under the rays the deep hole thus made was probed with pressure forceps and the point of the forceps could be placed upon the ball with ease. The ball could not be grasped, however, and on switching on ordinary light the point of the forceps was found to be on bone. On making quite sure of this by repeated screening it became evident that this bone must be callus[2] occupying the width of the interspace. Thereupon the callus was chiselled away and the leaden shrapnel ball revealed. To get it out it was necessary to chip away a little of the rib, both above and below. That done it was lifted from its bed with the utmost gentleness lest the pleura should be damaged. The wound was partly closed, but a drain was left in. Unfortunately convalescence was delayed by some degree of sepsis which commenced a week later; but on March 16th the patient was fit for discharge to England practically healed.

We had one case which specially showed the inefficiency of ordinary methods of localisation as aids to extraction. On screening the region of the hip foreign bodies were seen, a bullet and its mantle. The bullet was the darker shadow, lying anterior to the great sacro-sciatic ligament. During its passage from the wound of entrance, which was three inches below the great trochanter, the mantle of the bullet had been stripped off, and was seen as a fainter shadow behind the acetabulum. The bullet was therefore just inside the pelvis, whilst the mantle was left lying rolled up in the dense fibrous tissue behind the joint. The patient was wounded in December, and the bullet and mantle were not removed till he came under our care in March. We first saw him, however, a day or two after his wound had been received, for he was sent to us by a French hospital for radiographic examination. The position of the bullet was then marked on the skin and located at a depth of eight centimetres. Armed with this information and with a plate, the French surgeon, a most competent operator, made an incision four inches long in the line of the great sciatic nerve. He searched fruitlessly for the bullet, and the patient after 66 days in hospital returned to duty. Eighteen days later, on March 11th, he was sent back to hospital on account of pain in walking, and there was tenderness posteriorly over the neck of the femur. On the 13th he was operated on for the second time, on this occasion at the Baltic Hospital. A three-inch incision in the line of the great sciatic nerve, and then splitting of the gluteus maximus in the line of its fibres were the initial stages of the operation. Then the rays were switched on, and by blunt dissection the bullet located. It was levered up from its bed by an elevator pushed gently under its lower pole and removed by forceps. The mantle was extracted without difficulty. When the soldier left the hospital a week later his wound was healed and his pain had gone.

The minimum of damage is done to the tissues by "the direct method." Of this fact the case illustrated by Fig. 5 affords a striking example. The story is a simple one. The man was wounded in the neck at Antwerp on Sept. 11th, but did not come into our hands until March 7th. He had been to England in the interval and his wound had healed, but he still had pain in his neck, and was sent to us on that account. The scar was an inch to the left of the sixth cervical spine. The X rays showed a shrapnel ball lying between the transverse processes of the first and second dorsal vertebræ. A vertical incision was made over it through the skin and the aponeurosis of the trapezius. The muscles were split in the lines of their fibres and then under the rays the forceps was inserted and the ball grasped and removed. Eleven days after he had been admitted the patient was discharged free from pain and healed.

FIG. 5.



Showing a shrapnel bullet lying between the transverse processes of the first and second dorsal vertebræ.

It has been urged by some that this method of operating holds considerable danger for the surgeon, but after six months of operating by it I may say, speaking personally, I have had no trouble. Working with the smallest diaphragm available it is possible to keep the hands almost always out of the "direct line of fire." We take the precaution to smear the nail-beds with flexile collodion before each operation. Two pairs of rubber gloves are worn, an outer thick pair which can be removed when the extraction is completed, and an inner thin pair for more delicate work.

During the past six months upwards of 132 wounded patients have been admitted to the Baltic Hospital with projectiles still lodged in the tissues. In many wounded by artillery several shrapnel balls or fragments of shell casing were present. In all except four instances the foreign body has been removed, and in the great majority this has been accomplished by operating directly under the X rays.

In conclusion, I wish to acknowledge my indebtedness to Dr. L. J. Picton (St. John Ambulance), surgeon and registrar, for his help in compiling these cases. My thanks are due also to Dr. H. R. Ramsbotham, B.R.C.S., and Lieutenant A. E. Chisholm, R.A.M.C., for their permission to publish two of the cases which were respectively under their care.

Baltic and Corn Exchange Hospital, Calais.

BRISTOL INSURANCE COMMITTEE.—This committee reports that in Bristol there are 133,578 members of Approved Societies and 2056 deposit contributors.

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[2] The callus being recent is evidenced by the merest cloud on the skiagram.

THE CHEMISTRY OF RICE-POLISHINGS.

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IN 1911 we published evidence that beri-beri in Malaya is caused by the consumption of polished rice as the staple of diet, and that the substance or substances in rice-polishings and in unpolished rice which prevent the disease are soluble in alcohol and are decomposed by sodium hydrate. The experiments with sodium hydrate were referred to on page 74 of our report, but as one of the methods since employed by chemists who have sought to isolate the substance has involved the use of barium hydrate it is desirable that details of these experiments should now be given.

From a series of observations it was determined that fowls weighing from 1200 to 1400 grammes ordinarily consumed about 60 grammes of unpolished rice daily, and if fed on 60 grammes of polished rice they required in addition 5 grammes of polishings for the maintenance of weight and health. The polishings were passed into the crop once daily in the form of an emulsion in water.

In our experiments polishings were extracted twice with six times their volume of 0·3 per cent. hydrochloric acid. The polishings after extraction were tested and found valueless. Alcohol was added to the extract so as to bring the mixture up to the strength of proof spirit. The precipitate, which consisted of phytin, was rejected. The filtrate was nearly neutralised, concentrated at a low temperature, and its volume so adjusted that 30 c.c. contained the material soluble in proof spirit from 5 grammes of polishings.

Eighteen fowls were fed on polished rice and received once daily 30 c.c. of this solution. Their health was unimpaired, as is shown by Table I., which gives the weights in grammes of the first six fowls.

TABLE I.

Date.	1	2	3	4	5	6
7-8-10 ...	2095	1265	1550	900	1410	1105
11-8-10 ...	2140	1280	1695	850	1430	1160
18-8-10 ...	2100	1380	1655	905	1425	1075
25-8-10 ...	2060	1275	1625	915	1445	1070
1-9-10 ...	2050	1265	1660	935	1460	1100

Another lot of polishings was extracted in the same way and alcohol added to the extract as before. To the proof-spirit filtrate sodium hydrate was added so as to make a solution containing 0·3 per cent. of that substance. The precipitate was collected, and the amount of it obtained from 5 grammes of polishings was given once daily to each of six fowls fed on polished rice. The results of this experiment during 12 days are shown in Table II.

TABLE II.

Date.	1	2	3	4	5	6
5-9-10 ...	1440	1615	1575	1565	1195	1385
12-9-10 ...	1340	1595	1340	1565	1255	1325
17-9-10 ...	1265	1555	1335	1400	1215	1305

The filtrate was neutralised and evaporated at a low temperature until free from alcohol. The volume of the solution was then adjusted, so that 30 c.c. represented the non-alkali precipitable material from 5 grammes of polishings. Each of six fowls on polished rice received 30 c.c. of this solution once daily. The results of this experiment during 12 days are shown in Table III.

TABLE III.

Date.	1	2	3	4	5	6
5-9-10 ...	1520	1620	1555	1565	1260	1410
12-9-10 ...	1450	1505	1320	1470	1250	1490
17-9-10 ...	1405	1420	1180	1380	1200	1410

The fowls in neither of these two groups did well and most of them lost weight rapidly. On further examination it was found that 0·3 per cent. of sodium hydrate did not effect complete precipitation. From this it was inferred that the active substance was either separated into two parts or that it has been decomposed by the alkali.

It was found that by making the proof spirit alkaline to the extent of 0·5 per cent. sodium hydrate precipitation was complete. An experiment was then carried out in which fowls on polished rice received daily the alkaline precipitate obtained in this way from 5 grammes of polishings (Table IV.).

TABLE IV.

Date.	1	2	3	4	5	6
14-9-10 ...	1430	1145	1345	1030	1340	1595
20-9-10 ...	1320	1010	1290	960	1180	1360
27-9-10 ...	1255	915 P.	1170	845	1065	1275
29-9-10 ...	—	—	P.	—	—	P.
1-10-10 ...	—	—	—	—	P.	—

P. = polyneuritis.

It soon became apparent that the fowls were not doing well and the occurrence of polyneuritis ended the experiment. In view of the preceding results it was unnecessary to carry out an experiment with the alkaline filtrate. The inference from these experiments was that sodium hydrate in weak solution destroyed the active substance.

These experiments were not designed to test the destructive effect of alkali, but were attempts to isolate the active substance, and the results were surprising in that so weak an alkali should destroy a body which is not affected by boiling. Various other methods were tried without success.

Funk continued these researches, and in 1912 announced that he had isolated an organic base which he called "vitamine" and to which he attributed curative properties. He extracted polishings with acidulated alcohol and then removed the alcohol by concentration *in vacuo*. The residue was mixed with water and freed from fat. It was then acidulated with sulphuric acid and excess of phospho-tungstic acid added. The precipitate was removed and the filtrate, freed from phospho-tungstic acid, was found to be ineffective. He then mixed the precipitate with barium hydrate and removed the barium phospho-tungstate. The filtrate, he stated, contained ammonia and smelt of methylamine. This suggested to us, in view of our experience, that he had decomposed the active substance. The further treatment to which he subjected the odoriferous filtrate strengthened that view, and we were unable to reconcile his results with our own. From subsequent publications it is learned that he became less certain of the soundness of his results, and in 1913 he stated that two substances were necessary to effect a cure; but a paper which has just been published by Drummond and Funk confirms our findings, for they state that "we have ourselves failed to isolate the curative substance which occurs in rice polishings. It is apparently decomposed during the fractionation and all trace of it is lost." Through the complicated processes to which the extract was subjected by them it is unnecessary for us to go, save to express the belief that the decomposition was, in part at least and perhaps entirely, due to the use of baryta.

The existence of "vitamine" in the sense that Funk employed that word is therefore disproven. The word itself is not objected to and may be applied to the substance when it is isolated, but the premature publication of results which, on the findings of the writer himself, are subsequently shown to be erroneous creates confusion and retards progress. At the present day the problem is no nearer solution than it was four years ago, nor is progress likely to be made until improvements are effected in the methods employed by chemists in this work; those now employed are crude and imperfect.

Bibliography.—Fraser, H., and Stanton, A. T.: Studies from the Institute for Medical Research, No. 12, 1911. Funk, C.: Journal of Physiology, vol. xlii., p. 395, 1911. Ibid, vol. xlvi., p. 173, 1913. Drummond, J. C., and Funk, C.: Biochemical Journal, vol. viii., p. 598, 1914.

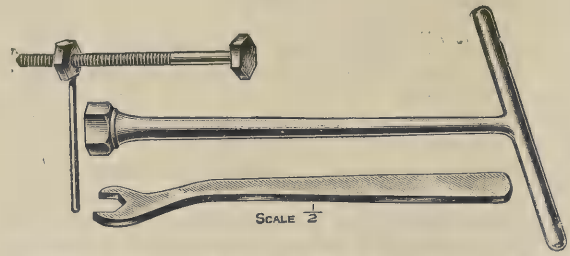
Kuala Lumpur.

A BOLT FOR THE TREATMENT OF FRACTURES.

By CUTHBERT WALLACE, M.B., B.S.LOND., F.R.C.S. ENG.,
SURGEON, ST. THOMAS'S HOSPITAL; JOINT LECTURER ON SURGERY IN THE MEDICAL SCHOOL.

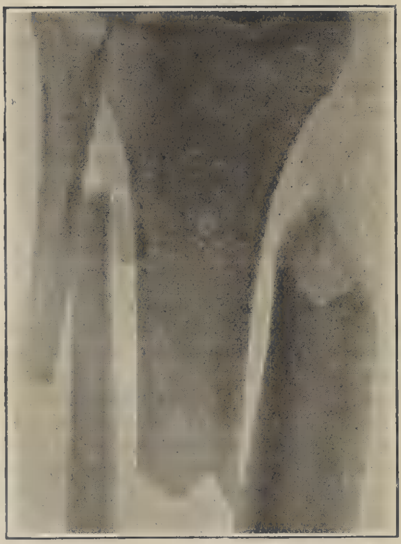
THE plating of a long oblique fracture presents some difficulties. To ensure complete fixation two plates are required, one on either side of the bone at the opposite ends of the fracture. Even if only one plate used the shaft of the bone beyond the end of the fracture must be exposed to allow the application of the plate. Some years ago I devised a bolt (Fig. 1) for the treatment of long oblique fractures and have found it useful in fractures which are only slightly oblique.

FIG. 1.



Showing the essential parts: 1. A bolt. 2. A nut with a soft wire brazed to one facet. 3. A flat spanner. 4. A clock-key spanner.

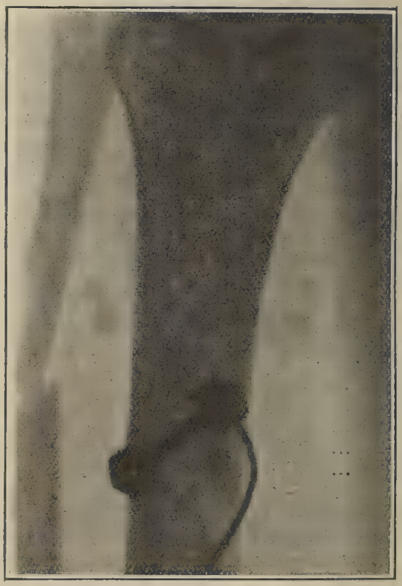
FIG. 2.



Shows a fracture before bolting.

The mode of application is as follows: The fracture is reduced. A hole is then bored through the centre point of the fracture with a Morse drill. The axis of the hole should be at right angles to the axis of the bone. If the fracture is not very oblique it is best to set the bolt somewhere near a right angle to the fracture. The hole should allow the bolt to pass easily. The bolt is pushed through till the end just emerges on the opposite side. (Figs. 2 and 3.) The nut is then taken up by the wire and held so that the bolt can engage when turned by the clock-key spanner. The bolt is then screwed home, rotation of the nut being prevented by traction on the wire. Very little force is necessary to bring about complete fixation of the fracture. When this is accomplished the protruding end of the bolt is cut off by a pair of screw-cutting forceps. The wire is then bent round the bone to the head of the bolt and the redundant part cut off. The object of leaving the wire *in situ* is that the nut can easily be withdrawn if it is necessary to remove the bolt when union has occurred. If the bolt passes obliquely to the axis of the bone-shaft the head can easily be housed by cutting away some of the shaft.

FIG. 3.



Same as Fig. 2, after bolting.

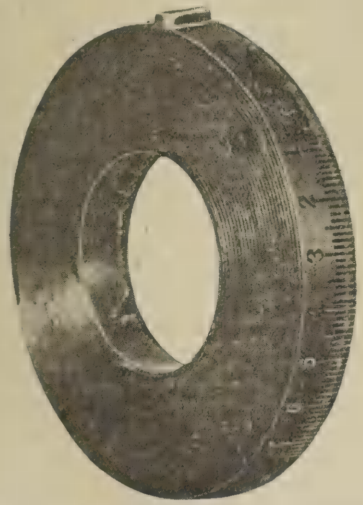
Upper Wimpole-street, W.

Clinical Notes:
MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

SHELL WOUND OF THE LEFT SHOULDER; EXTRACTION OF FRAGMENT FROM THE NECK.

By J. B. Haycraft, M.B. Edin.,
LIEUTENANT, R.A.M.C. (TEMPORARY).

A private of the Guards was admitted on Nov. 3rd, 1914, with a shell wound on the back of the left shoulder, which he had received three days previously. The wound, which was oval in shape, with jagged edges, and about the size of a five-shilling-piece, was situated almost exactly over the back of the joint. The exposed muscle and fascia were greenish-black in colour, and there exuded a lot of brown-coloured foul-smelling fluid, together with bubbles of gas and broken-down blood clot. The shoulder, back, and left side of the neck were greatly swollen, and the skin over a wide area was discoloured, being of a bluish colour close to the wound, fading away to a yellowish-brown with an apparently raised edge. The head was held rigid, any movement of the neck causing severe pain. There was a great deal of dyspnœa, the patient having to be propped up in bed, and he could only swallow liquid food with difficulty. He had a high temperature and sweated profusely, showing signs of septic absorption. The wound was probed, but nothing was detected, neither could anything be felt on palpation of the neck or back. Owing to the valvular nature of the wound the finger could not be inserted for any distance.



"Time train" of a German shell, exact size, extracted from shell wound.

Nov. 7th: The wound had been syringed out twice daily with hydrogen peroxide, and the patient's general condition was much improved. Œdema and discolouration were less marked, and breathing was much easier though there was still considerable difficulty in swallowing. A localised swelling was now apparent in the left supraclavicular space; it was slightly red, extremely tender, and on percussion yielded a resonant note.

Under chloroform an incision about 2½ inches in length was made over the swelling in the posterior triangle of the neck. Its direction was diagonal from above downwards and inwards. On dividing the deep fascia some gas and foul-smelling fluid escaped, and on exploring with the finger a large cavity was found in which a foreign body could be felt at a considerable depth from the surface. The incision, being too small to permit of its extraction, was enlarged, the external jugular vein being divided between forceps and ligatured. The body removed proved to be the circular movable "time train" of a German shell. It is situated just behind the apex of the shell, and can be moved round regulating the time at which the shell will explode after being fired. It weighed 6¼ oz. and was lying in a slanting direction pressed up against the great vessels, œsophagus, and prevertebral muscles. A drainage-tube and gauze packing were introduced.

Nov. 8th to 16th.—The wounds were syringed through twice daily with hydrogen peroxide and sloughs removed. The swelling and discolouration gradually disappeared and all difficulty in breathing and swallowing was relieved. The patient was discharged on Nov. 16th, the wounds being practically clean.

The points of interest in the case are: (1) The small size of the entrance wound compared with the diameter of the piece of shell; (2) the presence of so large a foreign body in the neck which could not be detected by palpation; and (3) its close proximity to several vital structures without proving fatal. The illustration represents the actual size of the object.

A CASE OF INTESTINAL OBSTRUCTION DUE TO A GALL-STONE,
IN THE COURSE OF WHICH NUMEROUS GALL-STONES WERE VOMITED.

By A. R. Neligan, M.D. Lond., M.R.C.S., D.T.M. & H. Cantab.,
PHYSICIAN TO THE BRITISH LEGATION, TEHRAN.

Cases of intestinal obstruction due to gall-stones are recorded in medical journals fairly frequently, but the vomiting of gall-stones must be, I think, an event of some rarity. However that may be, my small library makes no mention of it, and so I venture to describe the first case of which I have heard.

The patient, an enormously fat Russian woman, 55 years of age, and of alcoholic habits, was seen early on August 14th, 1914, for diarrhœa, vomiting, and abdominal pain. These symptoms had come on during the night, and were ascribed to a surfeit of grapes on the previous day. There seemed to be no doubt of this, for, before I left the house, she vomited a quantity of grape-pips and skins, a fact which moreover suggested that her stomach was dilated. A large drink of warm alkaline water was prescribed in order to wash out the stomach, to be followed by calomel in fractional doses. In the evening I was called to see the patient again. The diarrhœa had stopped before midday—in fact, no flatus had been passed since that hour; the vomiting was as bad as ever and the vomit consisted of bile and mucus. The pain was coming on in severe paroxysms; it was felt all over the abdomen, but was particularly severe in the right hypochondrium. The abdomen was more distended than in the morning; nothing definite could be felt in it or per rectum.

A fact in the patient's previous history now assumed importance—namely, that some six months before I had seen her in consultation on account of prolonged fever and obstinate constipation. She had then an enlarged and tender liver; continuous with the lower border of the right lobe and extending to the navel was a large tender mass. There was a leucocytosis of 25,000. The diagnosis lay between abscess of the liver and cholecystitis. An operation was recommended, but was refused. The patient slowly recovered and the tumour disappeared as I was afterwards told.

From her present symptoms I therefore came to the conclusion that she was suffering from biliary colic with reflex paralysis of the bowel. The usual remedies were ordered as well as large enemata. During the next day the vomiting continued and the vomited matter took on a fæcal odour; the pain increased, the abdomen became greatly distended, the pulse weaker and more rapid. The bowels had not acted in the night, nor had flatus been passed. While I was in the room that morning the patient vomited into a metal vessel, and I was attracted by a sound which suggested that a charge of buck-shot had been fired into it. On examination a number (about 30) of small faceted gall-stones were found, the largest of which was about the size of a dried pea. The patient said she had vomited a smaller number of similar stones some hours previously.

It was now evident that the woman had intestinal obstruction. Further, it seemed reasonable to suppose that no other cause having been found, the obstruction was due to a gall-stone which had escaped from the biliary passages into the bowel. As she was obviously going down hill I advised that laparotomy should be done. This was refused by her medical attendant on the ground that she ought to have had an operation six months before, but had got well without one. This seemed rather curious reasoning at the time, but later events justified it.

On the morning of August 16th the patient was still weaker. A variety of enemata had been tried without result, but a little flatus had been passed. The abdomen was still more distended. That evening I was called to see her again. I found her looking better and wearing an almost triumphant smile. Apparently she had felt very ill during the afternoon and had asked her master to give her some champagne. He had sent her a bottle. She drank a glass and felt better and had a strong desire to go to stool. She passed flatus, liquid fæces, and something hard which made such a noise in the utensil that "she and everyone else were frightened." This turned out to be a gall-stone. Unfortunately, the family's curiosity had been too much for them and the stone had been broken with a hammer. What was left showed that it must have been roughly round in shape and three centimetres in diameter; it must have weighed about 16 grammes. There was one large facet. The stone consisted of cholesterol with an external coating of phosphates 1 millimetre thick.

The patient made a good recovery, and her abdomen shows no signs of the stormy events which had taken place inside it. She has now been quite well for three years; this in spite of the fact that she looks upon champagne as a sovereign remedy and does not at all approve of the Russian campaign against vodka. Surely Nature has never made a more determined or a more successful effort to get rid of gall-stones.

Tehran.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF PATHOLOGY.

Tyrosine as an Aid in the Demonstration of the de novo Origin of Living Organisms.—Aneurysm of the Left Ventricle.—Arc Light Method of Isolating Typhoid Organisms, and Agglutination Method.

A MEETING of this section was held on May 4th, Dr. F. W. ANDREWES, the President, being in the chair.

Dr. H. CHARLTON BASTIAN read a paper on the Importance of Tyrosine as an Aid in the Demonstration of the Present-day *de novo* Origin of Living Organisms. He said that the incredulity with which the results of experiments showing the occurrence of "spontaneous generation," called by him "archebiosis," had been received had given rise to attempts to explain them away by one or other of three suppositions: (1) that the bodies found were mere simulacra or pseudo-organisms; (2) that the organisms found were dead, and having pre-existed in the experimental solutions were killed by the sterilising process; and (3) that the alleged organisms had not really been taken from the tubes but had come from an impure pipette, or dropped from the atmosphere on to the microscope slide before the cover-glass had been applied. He adduced evidence to show that the last view was untenable. To dispose of objections (1) and (2), tyrosine had proved valuable since the use of a small quantity of a very dilute solution of this substance caused the living organisms that might be present to grow and multiply freely. Its effect was noted on the contents of tubes which were fairly ripe for examination—i.e., seven to nine months after sterilisation. From each tube that was opened a sample of the deposit was taken with a well-sterilised pipette, and then with another pipette about 20 drops of the sterilised tyrosine solution were added. The tube was then securely closed and again placed in the incubator or exposed to light. After three or four weeks each tube was opened again and another sample of its deposit was withdrawn, stained, and compared with the earlier sample. All of about 40 of these tubes that had been examined had shown a very remarkable increase in the number and size of the organisms. The unmistakable growth and multiplication of the organisms effectually negatived the suppositions that they were either simulacra or dead. When tyrosine was added to new tubes, however, every one remained sterile, which seemed to indicate some harmful effect of the tyrosine on the solutions. This result, though unexpected, told strongly against supposition (3).

Dr. R. HINGSTON FOX exhibited a specimen of Aneurysm of the Left Ventricle. The aneurysm projected from the apex of the heart and was about as large as a cricket ball. Over it the pericardium was adherent. The aortic valve showed sclerotic changes and a coronary artery some thickening of its walls. Both kidneys were enlarged, adherent to the perinephric fat, and contained calculi, one as large as a walnut. Some of the distended loculi contained pus, and one a yellow substance, of amber hue, which could be cut easily with the knife. No changes attributable to syphilis were found elsewhere in the body.

Professor G. DREYER and Dr. E. W. AINLEY WALKER demonstrated the Arc Light Method of Isolating Typhoid Organisms devised by the former.[1] Professor Dreyer said that the results of light on micro-organisms had been much confused with those of heat. Speaking of the powers of different parts of the spectrum, in this respect, he said that a great effect was caused by the ultra-red rays, but the maximum effect was shown by the ultra-violet. The intervening parts of the spectrum were less effective, gradually strengthening from red to the first part of the ultra-violet, but weakening somewhat at the violet. The effect of light on micro-organisms could be studied in detail by using clear glass, blue glass, quartz, or a solution of potassium bichromate. It was possible by means of selected light to isolate micro-organisms, even when this was impossible by ordinary bacteriological methods. Speaking of the application of the method to typhoid fever, he said that an emulsion of a large mass of fæces could be used, which was advantageous. Four drops of good size were then dropped on to a gelatine plate by a Pasteur pipette and rubbed well over its surface until almost dry. The middle part of the plate was then exposed to the light, the lateral parts acting as controls. With successive exposures of a few seconds more and more of the surface in sections was protected from the light, so that different parts of the plate were exposed for different periods. The electrode could be of iron, aluminium, platinum, gold, or silver, the last being preferable as far as had been found at present. This electrode closely apposed a hollow tube containing a smaller hollow tube. Cold water flowed in through the inner tube, impinged on the electrode, and flowed out through the outer tube. In this way a perfectly cold light was assured and fusing of the electrode safeguarded.

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[1] THE LANCET, March 27th, 1915, p. 646.

Professor **DREYER** also demonstrated shortly the agglutination method which is associated with his name.[2] By it the temperature was kept constantly at 55° C., the culture was one of dead organisms, and consequently constant also. The advantages he claimed for it were that co-agglutination did not occur, that the end point of reaction was reached practically at the end of half an hour, and that a constant temperature and emulsion of organisms being employed the agglutinating powers of sera could be strictly comparable.

Dr. **AINLEY WALKER** said that the advantages of the arc light method were its rapidity, the large amount of material which could be examined, and the avoidance of the gradual dying out of organisms which occurred by using media. The agglutination method he considered to be certain and reliable, and an easy method of distinguishing an active case of typhoid fever from a case in which immunity had been attained. It allowed of a comparison being made between the agglutinating power of the patient's sera on succeeding days. The cultures could be used in very high dilution.

SECTION OF PSYCHIATRY.

The Thyroid Gland and Mental Disorder, with Especial Reference to Hypothyroidism.—Exhibition of Cases and Specimens.

A clinico-anatomical meeting of this section was held on April 28th at Claybury Asylum, by the courtesy of Dr. Robert Armstrong-Jones, under the presidency of Dr. F. W. MOTT, F.R.S.

Dr. M. **KOJIMA** read an interesting paper setting forth the results of examination of the thyroid gland in 110 cases of mental disorder, with especial reference to hypothyroidism. In this consecutive series all the ductless glands were carefully removed from the body, then freed from their surrounding tissue and weighed. The minimum average weight of the thyroid in the non-insane was 22 to 25 grm. In the average insane person the weight was much less—namely, about $16\frac{1}{2}$ grm. in males and 16·87 grm. in females, but there was considerable variation in the weights among the insane, especially in females. He considered that all these cases exhibited hypothyroidism. The weights of the external parathyroid in 41 cases varied from 0·01 to 0·07 centigramme. In a third of the cases four glands were found. The weight of the pituitary body seemed to have no relation to the nutrition of the body or to the form and duration of the insanity. The adrenals of the male were heavier than in the female, and there was no relation of their weight to that of the body. No definite conclusion could be arrived at regarding the weight of the reproductive glands in the male and female in relation to body weight or mental disease, except that in congenital imbecility and dementia præcox the ductless glands were all below the average weight. The paper was illustrated by a number of microphotographs.

The **PRESIDENT** gave a microscopical demonstration of the changes in the nervous system in hypothyroidism. He discussed the changes he had found present in the nervous system in six cases of the condition. These chromolytic changes he first observed ten years ago in a case of myxœdema which was under his care at Charing Cross Hospital, as reported to the International Medical Congress at Lisbon, in a communication entitled "Cerebral Lesions in Relation to Psychoses of Toxic Origin." Mr. Arthur Edmunds, working in his laboratory, had found similar changes in dogs from which the thyroid gland had been removed. The changes in question were not specific of hypothyroidism; this metabolic change in the cells had been found in other conditions also. In the Proceedings of the Society in 1913 (Vol. VI.) he gave an account of the microscopical investigation of the nervous system in three cases of spontaneous myxœdema. In the case of a woman whom Dr. Armstrong-Jones had sent for him to see there was anæmia, but the only signs of hypothyroidism present were slight dryness and harshness of skin, a malar flush, and slowness of speech. She showed marked confusion. She died shortly afterwards, and he (Dr. Mott) examined the thyroid gland and nervous system. As the changes seen in her had been since found also in three other asylum cases, the faults which had been described by Dr. Kojima might be regarded as established, seeing that these had now been found in six cases. The thyroid showed only a few remnants of glandular structure amid the lymphoid structure, and a large excess of fibrous tissue. The autonomic centres in the medulla were more affected than were the other cells, but all the cells of the central nervous system and spinal ganglia, especially the small viscero-vascular cells, exhibited some chromolytic change. The processes were but indistinctly seen, and the nucleus was excentric. He specially wished to show the changes in the cortex, so as to correlate the mental symptoms with the changes in the cortical cells. These he demonstrated by a series of slides. A section from the cardio-inhibitory centre in a typical case of myxœdema showed a pericellular chromatolysis in all the cells. Similar changes were seen in the glosso-pharyngeal nucleus and the psychomotor cortex; the cortical pyramidal cells had lost their position, and instead of lying in columns with the apical processes pointing upwards, they were twisted from side to side. A superficial layer of the cortex, stained with Victorian blue, showed a network of glial cells and a superficial felting in the cortex, owing to the extreme glial proliferation. A low-power slide showed that the columns of Meynert, formed by the pyramidal cells and their processes, were too indistinct to be recognised, their places being partly taken by nuclei of proliferated glial cells. In these cases there had been a change which led to the disappearance of the substance known as the Nissl substance, which probably occurred on account of an alteration of the osmotic conditions of the cells, allowing water to pass in and swell the cell. If, as was supposed, this basophile substance was the kinetoplasm, this change constituted a physical reason for the slowness of speech and cerebration which these cases manifested. The President also showed slides of ganglion cells in the living stage, as viewed with the dark ground microscope; an enormous number of highly refractile granules were seen in the cell. The little granules of fluid were enclosed by a thin membrane which stained blue, and this formed the Nissl granules when death occurred. This change could be watched. His view was that these granules formed an enormous oxygen surface, because if they were stained blue and placed in an atmosphere of nitrogen in a warm chamber the colour disappeared; but on letting oxygen in the colour returned. It would be important to be able to prove that the Nissl substance was the energy substance, for in hypothyroidism there was a definite lack of that substance, and it would account for the loss of mental capacity and of alertness of response observed in these patients.

Dr. **ARMSTRONG-JONES** exhibited a number of cases of Hypothyroidism, a condition due to loss of function of the thyroid gland. He said that though Schiff described cases of this condition in 1859, Gull in the "sixties," Ord in 1880, Kocher in 1883, and Sir George Savage over 30 years ago in Tuke's "Dictionary of Psychological Medicine," where the association with insanity was indicated, it was through the special interest of Dr. Mott that the question was now raised in its bearing on insanity or mental disease, for he made the relation of the ductless glands (thyroid, suprarenal, pituitary, ovaries, and testicles) the subject of his address last year. Sir Victor Horsley had demonstrated the effect of removal of the thyroid. A committee of the Clinical Society of London also studied the question, and it was known that the condition cachexia strumipriva, allied in all respects to myxœdema, was induced in animals by removal of the thyroid gland, and that this could be prevented by transplanting the thyroid of an animal into the peritoneum. Sir William Osler had stated that the thyroid became congested at puberty and during menstruation; also in women at the defloration period. Also, that the gland, or a lobe of it, became enlarged in conjunction with recent syphilis or secondary to infection. Baumann demonstrated that the nucleo-albumin of the gland contained a large percentage of iodine, and that it was present with protein matter within the vesicles of the thyroid; also that the gland manufactures some thyroantitoxin, and forms an internal secretion having the characteristics of an alkaloid. This substance had a profound physiological effect on the whole organism through the medium of the blood, for it acted as a hormone to other glands, while its absence was followed by physical and mental disturbance. On the physical side hyperthyroidism caused tremors, twitchings, tachycardia, headache, and prostration. Hypothyroidism caused an overgrowth of the subcutaneous tissue, the hands became unwieldy, the skin rough and harsh, and the hair disappeared or became sparse and wiry. On the mental side there was apathy, listlessness, and inactivity. Pawlow had shown how glandular secretions could be influenced by the emotions. In children absence of the thyroid produced sporadic cretinism and, possibly, idiocy of the Mongoloid type. In adults its absence eventuated in myxœdema. It was not by any means easy to recognise during life all cases of hypothyroidism, as some of the symptoms, such as tremor, seizures, and the mental reactions, were common to alcohol and general paralysis.

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[2] THE LANCET, Feb. 13th, 1915, p. 324.

Dr. LENA BEACH exhibited and demonstrated a case of Disseminated Sclerosis.

Dr. SANO reported the result of his anatomical investigations regarding speech functions in a case in which there was a cyst of the left hemisphere, dating from birth or shortly afterwards. The lesion had destroyed the whole of the centrum ovale on the left side, but, notwithstanding that, the man had been able to earn his living as a clerk. The cortex remained, but practically the whole of the projection system was destroyed.

HARVEIAN SOCIETY OF LONDON.

Discussion on Cerebro-spinal Meningitis.

A MEETING of this society was held at the Stafford Rooms, Titchborne-street, W., on April 22nd, Dr. G. DE B. TURTLE, Vice-President, being in the chair.

In a few well-chosen words Dr. TURTLE expressed the great regret with which the news of the death of the President of the society, Dr. Edgar G. Bulleid, had been received, referring in terms of appreciation to the great services he had rendered to the society. A resolution embodying the latter sentiments was passed, and an expresion of sympathy was sent to the widow.

Dr. Turtle was then unanimously elected President for the remainder of the session.

Dr. F. E. BATTEN opened the discussion on Cerebro-spinal Meningitis with a paper which was published in THE LANCET last week (p. 964).

Dr. DAVID NABARRO gave a résumé of the history of the bacteriology of the disease from the discovery of the meningococcus by Weichselbaum in 1887 down to the latest work upon the subject during the recent epidemic. He then described the morphology and biology of the meningococcus, and gave an account of its occurrence in the human body. The changes in the chemistry and cytology of the cerebro-spinal fluid in meningococcal meningitis were described, and the alterations which are brought about by injections of serum. Finally, he showed a number of lantern slides of the meningococci in the cellular deposit of the cerebro-spinal fluid and in culture.

Dr. J. A. ARKWRIGHT dealt with the epidemiology of the disease. He divided the history of the epidemiology into three periods: (1) Before the discovery of the meningococcus; (2) the period commencing with the isolation and description of the diplococcus intracellularis in 1887; and (3) the period introduced by the discovery of the organism in the naso-pharynx of a patient and one carrier by Albrecht and Gohn in 1901. He then dealt with the large epidemics which have occurred since that date. The question of carriers was next considered. It had been shown by various observers that though the carriers were usually free from the meningococcus in two or three weeks a small percentage were still carriers after two or even seven months, and Mayer had related a case probably existing two years. Carriers might develop meningitis after two or three weeks, and no doubt all cases were carriers for a longer or shorter period. Subjects of meningitis must be looked upon as persons who in the course of a pharyngeal infection developed meningitis as a complication. The bacteriological examination of contacts was next referred to and the differential diagnosis between the meningococcus and other Gram-negative cocci found in the naso-pharynx discussed. Prophylaxis was then dealt with. The detention and isolation of carriers early in the epidemic whenever possible were advocated, with the avoidance of overcrowding and the breaking up of large bodies of troops into smaller units. The value of prophylactic vaccination was as yet uncertain. The morbidity, contagiousness, and seasonal variation were next discussed. The variation of the number of carriers among contacts in different epidemics was alluded to. Among 300 soldiers who were contacts Dr. Arkwright and his colleagues only found four carriers. In other epidemics as many as 23 and 32 per cent. had been found by various observers. In conclusion, he said that there were many points still requiring elucidation.

Dr. L. COLEBROOK spoke of the treatment of meningococcus infections by vaccines. He suggested that this procedure should not be considered as alternative to the intrathecal injection of serum, but rather as complementary to it. By the use of serum it was hoped to check the multiplication of meningococci in the cerebro-spinal fluid, and possibly to promote their destruction by phagocytosis, and it remained for the patient's own antibacterial defences to deal with the microbes which had established themselves in the meningeal and cortical tissues—the more serious factor in the infection. By the inoculation of vaccine into uninfected tissues it was sought to whip up these antibacterial defences to a maximal effort. Dr. Colebrook referred briefly to his experience of about a dozen cases—some of the "posterior basic," others of the epidemic type—of meningococcal meningitis, in which vaccine had been used. He had several times seen the temperature come down promptly and the patient's condition improve in a manner which strongly suggested that the inoculation of vaccine had exercised a favourable influence on the infection. But sometimes it seemed that very serious injury had been done to the central nervous system by the invasion of the cortex, blocking of the foramina, &c., in the days or weeks of the disease prior to the commencement of vaccine treatment, and in these cases, although the infection might be controlled, as evidenced by the temperature, the taking of food, and so on, yet full recovery was very slow or did not ultimately occur. It was, therefore, of great importance to exploit the vaccine very early in the disease, for choice on the second or third day. Probably nothing was to be hoped for in the fulminant cases which ran their course within 24 hours, as the patient's response to vaccine would not be affected within a few hours at least, possibly a day or two. It might even do harm to inoculate a patient so suddenly overwhelmed with his infection. In view of the marked difference to reaction towards immune sera displayed by meningococci of various origins, it would seem best to use an autogenous vaccine whenever possible, but during an epidemic it was certainly worth while to try the effect of a polyvalent stock vaccine. Such a vaccine had recently been prepared at St. Mary's Hospital from some 15 strains isolated in various parts of the country. In reference to dosage of the vaccine, Dr. Colebrook suggested that the foremost consideration was the avoidance of any congestive focal reaction, particularly in cases with marked cerebral symptoms. He had seen the best results with doses of from 2,000,000 to 5,000,000 cocci in young children and 7,500,000 to 20,000,000 in adults. Such small doses should be repeated every third or fourth day. Replying later to a question by Sir JOHN BROADBENT, he said he had recently used the stock vaccine above referred to for the prophylactic inoculation of persons exposed to the danger of meningococcal infection and of carriers. He had hoped that the vaccine might help to get rid of the microbe from the naso-pharynx of carriers, but this had not happened with any regularity. He had used doses up to 2,000,000,000 subcutaneously and 300,000,000 intravenously for these purposes. There was usually no general reaction except after the intravenous doses.

Mr. H. G. Armstrong related his experience of an epidemic, commencing on Jan. 24th last, of cases of an indefinite febrile nature characterised by œdematous throats, cough of a laryngeal type, little or no expectoration, and slow pulse. Ninety-four cases occurred by Feb. 8th. At this date relapses began to occur. On the 12th a woman exposed to the infection of these cases was taken ill with what was at first considered influenza. She died from meningitis on the 23rd. A baby, 1 year old, exposed to infection from this case on Feb. 19th sickened on the 23rd and died on the 24th from cerebro-spinal meningitis. On the 18th, among the cases of relapse an eruption of a roseolar type was noted, mostly confined to the abdomen, forearms, and legs. In one case the eruption was general and resembled measles, in another it resembled scarlet fever. Several cases had herpes labialis and other painful erythematous patches. With one exception all made a speedy recovery, but the first case of the series developed cerebro-spinal meningitis, confirmed bacteriologically. Another case occurred on March 5th and the patient died within 24 hours, meningococci being found in both blood and spinal fluid. All cases of relapse with rashes had vomiting of straw-coloured fluid.

Dr. H. Lyon Smith and Sir John Broadbent, the latter of whom discussed the mechanism of the infection, also spoke.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Section of Surgery.

Localisation of Modern Projectiles with Reference to a Special Method of Surgical Technique in their Removal.

A meeting of this section was held on April 9th, Mr. H. Stokes being in the chair.

Dr. W. S. Haughton, in opening a discussion on the above subject, gave an account of the different methods of localisation in use, and described in detail the method which he recommended as the simplest and most exact. He then gave the surgical details he advocated in the removal of foreign bodies, and described fully a case he had recently under his care of a bullet lodged deep in the spinal muscles of the neck.

Mr. M. R. J. Hayes said that if Dr. Haughton had succeeded in spanning the gulf between the radiologist and the surgeon he was to be thanked, as in no department of their work was the gap so great between the radiologist and the surgeon as in the localisation of foreign bodies. He agreed with Dr. Haughton that the most accurate method of localisation was the Mackenzie Davidson method. It was more complicated than the methods usually employed, but he considered that the additional labour was fully repaid by the results. He considered Henderson's method, which was very expeditious and if properly carried out was fairly accurate, not at all as good as the Mackenzie Davidson. He suggested that in the localisation of bullets which were fairly large what was wanted was to get a fairly accurate method which was at the same time easy of employment, and he thought that with further experience of the triangular method it was quite probable that the results would be better than they had hitherto been. In looking for fairly large foreign bodies, if one could get within 2 or 3 millimetres there would be no difficulty in finding them, and it was only in the case of foreign bodies in the eye that one would be driven to the use of the more difficult method of Mackenzie Davidson. Mr. Hayes suggested that there were a great many foreign bodies which would be far better left alone, and he had seen cases in which the attempts at removal had done far greater damage than would have arisen had they not been interfered with. Referring to the interpretation of radiograms, he agreed with Dr. Haughton that no one was in as good a position to know the exact site in the limb of a foreign body as the radiographer. He suggested that even the expert radiographer, if given a perfect skiagram and asked to locate the foreign body, would experience as much difficulty as the surgeon who had not the experience. A point which should not be lost sight of in attempting to find a foreign body was the position which the limb was in at the time of localisation, and it should also be remembered that the approximation of depth was always open to error, as the substance being dealt with was subject to alteration by gravity and pressure. Another point of importance which should be attended to by surgeons was that when cutting down upon a foreign body it was very easy at the commencement of the incision to follow a line which one believed to be in the direction of the bullet, but one might go a little to one side, and by the time the object was reached, if it was deeply situated, he would be well to one side or the other.

Mr. W. I. de C. Wheeler said that a point which struck him was that if the bullet was localised and not found the whole fault lay with the surgeon, and this he agreed with to a certain extent.

Mr. P. E. Hayden agreed with Mr. Hayes that failures were often due to the deepening of the wound not being done quite in line where the incision was made. He suggested that a very valuable help in avoiding this mistake was first to mark the sites on the skin at either end of the wound. In deepening the wound it was advisable to look along these marks.

Mr. C. M. Benson also referred to the difficulty of cutting down straight upon the foreign body, and suggested that this difficulty was removed by Dr. Haughton's idea of putting down a long sterile probe, and he thought that if two of them were used one could be absolutely certain of going in the right direction without being dependent on the eye to correct any retraction on the wound.

Dr. Haughton, replying to the remarks, said he agreed with Mr. Hayes that in some cases very accurate methods of localisation were not required. He also admitted that if a bullet was lodged in a muscular pad it might safely be left there, but in his paper he assumed that the cases to be dealt with were those in which it would be considered desirable to operate. The influence of gravity in the localisation he had not lost sight of, and he considered it an important point which should be taken into account. He avoided suggesting any screening methods which involved length of time on account of the evil results of excessive exposure, and he would earnestly exhort everyone to keep away from screening as much as possible. He considered that the little gauge wire and the sterile needle demonstrated by him would be of the greatest assistance to the surgeon.

West London Medico-Chirurgical Society.—A meeting of this society was held at the West London Hospital on May 7th, Dr. S. D. Clippingdale being in the chair.—Dr. H. J. F. Simson read a paper entitled "Some Developments in the Management of Labour." He began by pointing out how often it happened among married women of every class of society that when they came to consult their medical attendant they dated the beginning of their ailment from the last confinement. Such a state of affairs went to prove that the methods generally practised left some room for improvement. With regard to the question of a painless labour, about which so much had been said lately in the lay as well as the professional papers, the results of using morphine and scopolamine to produce the so-called "twilight sleep" were not so free from objection as many wished the profession and the public to believe. It was not free from risk either to the mother or the child. There was little doubt that the use of chloroform increased the risk of post-partum hæmorrhage, and the after-effects were often so unpleasant that multiparæ frequently preferred to endure the pains of labour during their later confinements. However desirable it was to enable labour to take place without pain, the fact remained that it was not yet possible to do this in all cases without risk. The greatest source of danger from external help lay in the possibility of puerperal infection. It was quite true that the absolutely sure way of preventing avoidable infection was to depend on abdominal palpation for diagnosing the position of the fœtus, and if one waited until there was pressure on the pelvic floor before giving chloroform one could be more or less certain that the os was fully dilated. Before this stage of labour was reached, however, the patient often suffered a lot of pain. For instance, a slightly œdematous anterior lip coming down in front of the head often prolonged the last part of the first stage by half an hour or more besides causing much pain. How much better it was to push the anterior lip up between the pains; this would entail passing the finger into the vagina, of course. The point he wished to make was: if one can trust to one's precautions it does not matter, within reason, how often we examined in the last half hour, any more than if under proper conditions the hand is put frequently into the abdominal cavity during a laparotomy, but one must be able to trust implicitly in the precautions. With regard to the risk from post-partum hæmorrhage where means were taken to ensure painless delivery, either with chloroform or in the incomplete anæsthesia from scopolamine and morphine, the application of forceps at the end of half an hour's chloroform got over the difficulty if the chloroform was combined with the early administration of scopolamine and morphine, and a hypodermic injection of pituitrin shortly before the forceps were used.—Dr. Leonard Dobson considered Dr. Simson's paper so lucid and practical that there was little to add and nothing to criticise. With regard to the use of rubber gloves he had given them up as he found it practically impossible to keep them sterile during the progress of the confinement. He now relied on thorough washing and sterilising as for an operation and the use of a bowl of antiseptic solution into which the hands were frequently dipped. His experience of morphine and scopolamine had not been satisfactory and he had given up using it, especially on account of the effects on the child. He quite agreed as to the value of pituitrin given in the way Dr. Simson mentioned; the only drawback he had noticed was that occasionally the placenta was retained owing to the uterus contracting upon it instead of expelling it. With regard to the use of chloroform, he made it a rule never to give this unless the os was fully dilated and one could reasonably anticipate the birth of the head in about half an hour.—Dr. G. C. Crichton said that his experience taught him that the application of the forceps should not be too long delayed, whether the prolongation be due to fatigue or to a slightly contracted pelvis. As to antiseptic methods, great care and thought were needed in even ordinary simple cases; in the matter of cleanliness nothing was to be taken for granted.—Dr. Clippingdale gave some interesting details of historic confinements.—Dr. Vernon Monckton, Dr. S. R. Schofield, Dr. G. L. Turnbull, and Mr. W. P. Mallam also took part in the discussion.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on April 20th, Dr. A. Manknell being in the chair.—Dr. T. Jason Wood read a paper entitled "Some Remarks on Diagnosis in Abdominal Cases." These cases divided themselves broadly into two groups: (*a*) Those in which the symptoms were of sudden onset; and (*b*) those in which the symptoms were more moderate and of longer standing. In any case the chief things to decide were: 1. Was the patient's illness due to serious organic disease? 2. Was it a case in which operation was desirable or necessary, and when should operation be undertaken? Dr. Wood advised operation in all cases of serious abdominal injury if the pulse was good, as the probability was that some organ was ruptured. If the pulse was bad, the probabilities must be balanced and operation undertaken if possible. In civil practice all penetrating wounds should be operated on. In acute abdominal illness he laid stress on the fact that accurate diagnosis is well-nigh impossible. After enumerating the various conditions which may confront the surgeon when called upon to see an "acute abdomen," he pointed out that the first thing to decide was whether or not there was a perforation of a hollow viscus, as in these cases a few hours' delay meant death instead of recovery for the patient. He laid great stress on the fact that every case of severe abdominal pain is worthy of the closest examination from the very first. The cause of it is more likely to be serious than trivial. Until a diagnosis excluding certain things has been arrived at, purgatives on the one hand and morphia on the other should be avoided. Even though a perforation may have occurred no signs of collapse may be present.—The paper was discussed by Dr. W. Mitchell, Dr. D. Clow, Mr. G. H. Oliver, and Mr. J. Phillips, and Dr. Wood replied.—Mr. Oliver read a paper entitled "Some Remarks on Toxic Amblyopia." After mentioning the various drugs which have long been known to cause amblyopia, such as methyl and ethyl alcohol, lead, tobacco, male-fern, quinine, muscarine, iodoform, ergot, and many others, Mr. Oliver wished specially to draw attention to a new drug which had lately made its appearance in the treatment of pneumonia—namely, ethyl-hydrocuprein. He was called in consultation early in February to see a patient who had been very ill with pneumonia in the first week of January. Five-grain doses of ethyl-hydrocuprein were given every three hours. On the fourth day he had severe tinnitus and deafness, and on the fifth day he became suddenly blind, with semi-dilated and fixed pupils. In all he took 120 grains of the drug. He had bare perception of light, the retinal vessels were reduced to fine threads, and both discs were quite white and atrophic. Some slight improvement had taken place since.—Dr. J. C. Sykes introduced a discussion on the End-results of Gastro-enterostomy. He said that gastro-enterostomy had become one of the most fashionable and successful of modern operations, but unfortunately there were many failures, chiefly owing to faulty selection of cases. He severely condemned the surgeon who performed the operation in the absence of any trace of ulcer and comforted himself with the belief that it could drain the stomach and so relieve the suffering. It could not be too clearly emphasised that no good could come from gastro-enterostomy, ulcer though there be, if the pylorus was still patent and unobstructed. No food whatever would pass through an anastomotic opening, however large, so long as the outlet from the pylorus remained patent.—Mr. Phillips disagreed with Dr. Sykes's statement that no good could come from gastro-enterostomy if the pylorus was still patent, and quoted many cases where he had performed the operation with excellent results.—Dr. Mitchell said that X rays showed distinctly that food did pass through an anastomotic opening, even though the pylorus were patent.—Mr. Oliver, Dr. Wood, Dr. R. A. R. Lankester, and Dr. Manknell also took part in the discussion, and Dr. Sykes replied.

MEDICAL SOCIETY OF LONDON.—At the annual general meeting held on May 10th the following officers were elected:—President: Dr. William Pasteur. Vice-Presidents: Dr. David Lloyd Roberts, Sir St. Clair Thomson, Dr. Guthrie Neville Caley, and Mr. Walter H. H. Jessop. Treasurer: Dr. J. Mitchell Bruce. Librarian: Dr. Arthur Francis Voelcker. Honorary Secretaries: Sir John Broadbent and Mr. Hugh Lett. Honorary Secretary for Foreign Correspondence: Mr. Edmund Owen. Council: Mr. Donald Armour, Dr. Francis F. H. Bateman, Sir John Bland-Sutton, Dr. W. Ironside Bruce, Dr. Edmund Cautley, Mr. Edred M. Corner, Sir David Ferrier, Dr. H. Morley Fletcher, Dr. Herbert French, Mr. George E. Gask, Dr. John Gay, Dr. Bruce E. Goff, Mr. John D. Malcolm, Mr. Herbert S. Pendlebury, Dr. Guthrie Rankin, Dr. James H. Stowers, Mr. J. W. Thomson Walker, Dr. H. D. Waugh, Dr. W. H. Willcox, and Dr. Robert A. Young. After the business had been transacted a selection of the society's old and rare medical works were exhibited. Refreshments and smoking terminated the meeting. Owing to the absence of Sir William Osler on military service the annual oration and conversazione will not take place this year.

SMALL-POX AND VACCINATION IN BRISTOL.—At the last meeting of the Bristol health committee Dr. D. S. Davies, the medical officer of health, stated that the local outbreak of small-pox introduced from India was now practically at an end. Referring to vaccination, he remarked that it was difficult to get people re-vaccinated until they were face to face with small-pox, when they usually yielded without great demur. He added that he had recently had the gratification of vaccinating the originator of the antivaccination league in Bristol.

SANITARY INSPECTORS' EXAMINATION BOARD.—At the recent examination for qualifying sanitary inspectors under the provisions of the Public Health (London) Act, 1891, the examiners were Sir Arthur Whitelegge, chief inspector of factories and workshops (chairman); Dr. W. J. Howarth, medical officer of the City of London; Dr. Charles Porter, medical officer of health of St. Marylebone; Mr. O. Hall, medical officer of health of Plymouth; and Mr. R. Stephen Ayling, F.R.I.B.A. The examination included the inspection of artisans' dwellings and report thereon by the candidates, and the examination of specimens of meat and other foods provided by the Corporation from the City markets and specimens of fish provided by the Fishmongers' Company. Candidates were present from provincial towns as well as the London district, and 70 per cent. succeeded in passing the full examination.

Reviews and Notices of Books.

The Brain in Health and Disease.

By Joseph Shaw Bolton, M.D., D.Sc. Lond., F.R.C.P. Lond., Professor of Mental Diseases, University of Leeds; Medical Director, West Riding Asylum, Wakefield, &c. London: Edward Arnold. 1914. Pp. 479. Price 18*s*. net.

Those who have followed with interest and instruction Professor Shaw Bolton's researches on the correlation of cerebral structure and cerebral function and of mental symptomatology and cerebral pathology—as epitomised, for instance, in his recent Goulstonian lectures—will extend a ready welcome to this more ambitious volume, in which he deals with his systematic researches of some 18 years in a comprehensive fashion. In a brief but important preface he makes clear his point of view. After referring to the strides taken by biochemistry, bacteriology, and pathological psychology, and remarking that each of the methods of research based on these has been claimed by its advocates as the long-sought-for means by which the knowledge of psychology and of psychiatry would at last be advanced, he states that his volume is a contribution to the subject which is based on the old anatomo-clinical or clinico-pathological method, of which he truly remarks that it has been employed with success in the past in all the major investigations in the field of medicine.

The book is divided into two parts. The first deals with cerebral function in the normal brain: the minute histological features of the normal cortex are set forth in great detail and the accepted localisations of cerebral function are described and exemplified. The pathological changes in the cortex found in various mental diseases are given in similar detail, special attention being directed to those areas which are commonly affected. In this part of his subject Professor Shaw Bolton bases his findings on personal researches, which, for minuteness of investigation and breadth of interpretation, leave nothing to be desired. The second part of the book is concerned with cerebral function in mental disease. Taking the differentiation, which he has long advocated, of mental disease into "amentia"—i.e., subnormal cerebral function—and "dementia"—i.e., morbid cerebral function—the author proceeds to deal with the varieties of each, in every instance endeavouring to correlate their clinical features with their histo-pathology.

The author's main generalisation is based on a mass of clinical and pathological evidence which represents the work of many years, and is handled with great ability. He holds that the outer cell laminæ of the cortex subserve the associative, psychic, or educative functions of the cerebrum, in contradistinction to the inner layers, in which are localised the organic and instinctive functions. The subjects of amentia, in the sense above specified, are found, microscopically, to suffer from a more or less marked grade of deficient neuronic development, of subevolution of the cerebrum, while the subjects of dementia suffer from a more or less marked grade of true involution or dissolution. These changes are seen mainly in the cortex of the prefrontal region of the cerebrum. The existence of amentia does not preclude the onset of dementia. In arriving at these conclusions the author has made a specialty of the micrometric study of the cortex of the insane, and with unsurpassed patience has measured and investigated the histopathology of projection and association areas of the cortex in a very large number of brains from insane patients of every variety. His technique is described in detail, and well-reproduced illustrations render it easy for the reader to follow the author's argument and add materially to the value of the book.

It is clear that Professor Shaw Bolton has adduced evidence in favour of his main contentions which cannot be lightly set aside, nor can criticism be adequate unless it is based on the utilisation of similar material and on the prosecution of similar investigations. The alienist and the neurologist, indeed, the general physician, should be familiar with this monograph, in which the clinico-pathological method is shown to the greatest advantage and in which is embodied, as it were incidentally, a whole series of illuminating observations on the problems of cerebral function and cerebral localisation. At a time when indiscriminate resort to purely psychological methods of investigation might appear almost to be forcing a disruption of clinical phenomena in mental disease from any corresponding pathology, the solidly based researches here reported deserve the closest attention, and we anticipate for them a widespread recognition.

Flies in Relation to Disease: Bloodsucking Flies.

By E. Hindle, B.A., Ph.D. Cambridge: University Press. 1914. Pp. 398.

This is a companion volume to one recently reviewed in this column which dealt with the transference of disease by non-bloodsucking flies.

In the present volume the author details the present state of our knowledge concerning those flies which by their bite directly transfer parasites to the bodies of their victims and the nature of the parasites thus injected into human and other beings. The book, in fact, is a zoological handbook, but the author assumes a general knowledge of that science on the part of his readers. Any person thus prepared will obtain from the study of Dr. Hindle's guide a very good general acquaintance with the anatomy of the diptera, and also an insight into the systematic arrangement of those flies which form the subject of the treatise. Similarly, though to a less degree, the structure and life-histories of the parasites, protozoa and filariæ, are set before the student of this department of biology. The author, however, by no means neglects the utilitarian aspect of his subject.

Observing (in the preface) that "the fly's proboscis is more successful in retarding the progress of civilisation and the alleviation of human suffering than all the armaments of our most Christian Powers!" he reassures the less expert readers that as to yellow fever, "owing to the factors involved being relatively simple, it is literally possible within a few months to remove this most deadly disease from the list of human ailments." This and other diseases are entered into in the text with due regard to their history in the past and the symptoms available for their detection. Dr. Hindle points out the curious fact that so long ago as 1848 the origin of yellow fever was attributed to "some insect or mosquito." This, of course, was in the nature of a happy guess, for the real association between flies and the spread of disease is, as is well known, a matter of recent discovery. In the case of yellow fever, however, the discovery is very far from complete. Though the fly responsible has been tracked and is known to be Stegomyia fasciata, the parasite which it carries has not been hunted down. In the case of the, also tropical, disease dengue, the author gives us, what he does not in the case of yellow fever, two most informing maps; of these, one shows the range of the sickness and the other the distribution of the mosquito involved, which has been ascertained to be Culex fatigans. There is a very close correspondence between the two, which can be grasped at a glance.

This excellent volume shows us that while zoologists can justly boast of the utilitarian as well as philosophical importance of their studies, the medical profession have on their side given great stimulation to the investigations of the zoologists. The anatomy and systematic arrangement of various insects and protozoa are now becoming the best explored regions of the animal kingdom.

Castration and Ovariotomy.

By FREDERICK T. G. HOBDAY, F.R.C.V.S., F.R.S.E., Honorary Veterinary Surgeon to His Majesty the King; Examiner in Surgery and Obstetrics to the Royal College of Veterinary Surgeons, &c. London and Edinburgh: W. and A. K. Johnston. 1914. Pp. 162.

THIS is the second edition of a little book which has been out of print for some years, and that a second edition of a work on such a subject as "The Castration of Cryptorchid Horses and the Ovariotomy of Troublesome Mares" should be demanded proves that the tendency for "specialising" in animal surgery is moving with the times in the same way as has been the case in human practice. The new edition has been enlarged to include the castration of the domesticated and semi-domesticated animals, and the work of other specialists in this line has been freely quoted.

The first chapter deals with castration, and includes a clear account of the best and most usual methods of performing this operation in a large number of animals. The operations practised for scrotal hernia in the horse, dog, pig, and calf are next described, and then the author considers the interesting question of the castration of cryptorchid horses. The term "rig" or "ridgling" is commonly applied to horses with an undescended testicle. The origin of the term is uncertain, but one form of it—viz., "ridgil"—occurs in Dryden, who in his translation of Virgil's Pastorals, says:—

> And ware the Libyan ridgil's butting head.

Horses with this condition are notoriously vicious and uncertain animals, and their amorous tendencies often cause a great deal of trouble to their owners. Possibly it is this trait which explains the name "rig," since this word was employed by the old writers to denote a wanton or a strumpet. No doubt some male pseudo-hermaphrodites among horses are of this character, and in parts of the country the curious name of "Will-Gill" is applied to these animals. The derivation of this term also is a matter of curiosity. Can it be from will to wander, and gill or jill, a girl; denoting a similar conception of the characteristics of the animal to that implied by the name "rig." Most of the horses affected in this way are sterile, although potent, and the operation of castration is extremely successful in curing them of their "rig" propensities. As Mr. Hobday points out, to ensure success the strictest surgical cleanliness is as essential as in operations on the human subject.

Just as castration is a most useful operation in cryptorchid horses, so ovariotomy can often be practised with great success in the case of mares who suffer from a condition of troublesome, almost constant, œstrum. The failures are, as a rule, only in the case of old animals in whom kicking has become a habit, and if the operation is performed before the condition has existed for any length of time the results are excellent. The operation is performed by choice by the vaginal route, the posterior fornix being opened with a guarded knife, the opening enlarged with the fingers, the hand introduced into the abdominal cavity, and the ovaries removed by an écraseur. If the operation is done successfully there is practically no bleeding and the after recovery is very rapid. In one case alluded to by the author the mare was hunted on the sixth day after the operation and no ill-effects followed. In mares who have become a nuisance on account of indecent behaviour the author states that the operation almost always cures, and this opinion is based upon the results of more than 90 consecutive cases in which this operation has been performed.

Another interesting and useful operation described is the spaying of cows when they are nearing the age at which their dairy utility is diminishing. As a result the milk-supply is increased in quantity and enriched in quality, and the period of lactation is extended to an average of about 18 months. This procedure is practised to a very large extent in Switzerland, but for some reason or other an attempt made by the late Professor John Gamgee to introduce it into this country was not successful. It is interesting at the present time to recall the fact that the originator of the method of operating through the vagina in the cow is M. Charlier, of Rheims. Professor Flocard has recorded 5079 cases of spaying in cows, and in the last 3000 animals he has had no deaths and only 4 or 5 per cent. of accidents of secondary importance. An interesting final chapter on abnormalities of the sexual glands of man and horses is contributed by Sir John Bland-Sutton.

This brochure, as its author terms it, forms extremely interesting reading, and gives a very good and complete account of the two operations of which it mainly treats.

Animal Experimentation and Medical Progress.

By WILLIAM WILLIAMS KEEN, M.D., LL.D., Professor Emeritus of Surgery, Jefferson College, Philadelphia. With an introduction by CHARLES W. ELIOT, LL.D., President Emeritus of Harvard University. Boston and New York: Houghton Mifflin Company; London: Constable and Co. 1914. Pp. 312. Price 7*s.* 6*d.* net.

"THERE is not, and there never was on this earth, a work of human policy so well deserving of examination as the Roman Catholic Church." So, practically, begins one of the best known of Macaulay's essays. But there is another work of human policy which, although its life has been ephemeral compared to that of the Church, whether Western or Eastern, may take Macaulay's words to itself, especially when we remember who it was that said, "The Son of Man is not come to destroy men's lives but to save them." And that work is the great work of lessening or preventing disease and of rendering the most intricate operations of surgery possible and safe which scientific men of all nations have been carrying out for many years past, and especially within the last 50 years. That work is now undergoing the most stringent test possible on the battle fields of Europe, and nobly does it answer to the test. For the British part of the long battle line we have the report of Sir John French[1] as to the general health of the army, and among other things he says: "I would particularly comment upon the energy displayed by the Royal Army Medical Corps in the scientific efforts they have made to discover and check disease in its earliest stages by a system of experimental research, which I think has never before been so fully developed in the field."

Now practically the whole of modern surgery, the whole of preventive medicine, and the greater part of clinical medicine is rooted in and grounded upon researches made upon animals. These facts are, or should be, known to all medical men, though there are apparently some who are either ignorant of them or who do not believe them; but many a layman is naturally unacquainted with such facts, and to such we recommend Professor Keen's excellent book. It is a reprint of sundry papers and addresses, published or delivered from time to time between 1889 and 1913, and is divided into two main portions. The first comprises papers dealing with what has been accomplished by animal experimentation, the second includes those dealing with what Professor Keen calls misrepresentation on the part of objectors to "vivisection," using the word as the said objectors are wont to do, in its widest sense as signifying any kind of experiment upon a living animal. On the former portion it is unnecessary to enlarge, but in regard to the latter it is as well to insist on certain points. There is no one who will object to persons disliking vivisection or even as a matter of invincible ignorance denying that any advantages have accrued to humanity therefrom. The ignorant and the foolish have always existed, and will probably continue to exist. But what all honest men, whether they approve of vivisection or not, must reprobate, is the way in which the opponents of research try to bolster up their cause. The following examples of misrepresentation given by Professor Keen may serve as samples. One appears on p. vi., in which is quoted a letter written by Mrs. Henderson, Vice-President of the American Antivivisection Society, to the *Philadelphia Ledger* of Dec. 19th, 1913. In this letter she asserts, says Professor Keen, that "Dr. Crile's book ...... repeatedly describes experiments followed by the words 'no anæsthesia!'" Dr. Crile answered this charge by saying that in not a single instance do these words appear in his book ("Surgical Shock"). Professor Keen could not find them either, but he did find the following words: "In all cases the animals were anæsthetised." Mrs. Henderson, on being challenged both by Professor Keen and by the editor of *Harper's Magazine* to name the pages in question, did not reply, nor do we know that she has replied since this book was published. An even worse case is the misrepresentation of Dr. Wentworth, of Boston, of whom the antivivisectionists wrote in the *Journal of Zoophily* for April, 1910, that he experimented "upon between 40 and 50 little children in the Children's Hospital of that city, every one of whom died after the performance of his operation." The whole story is too long to quote, but shortly the facts are these. The date was 1895 when the operation of lumbar puncture was new. Thirty children had 45 punctures made. In 3 cases the puncture was made after death. In 15 of the 30 cases the puncture was made for diagnostic purposes, meningitis being suspected. In the other 15 cases the puncture was made for cytological research. Of the 27 living children who had the operation performed 14 died, not from the puncture, but from meningitis, or tubercle, or pneumonia.

We recommend, in conclusion, the persual of the series of papers at pp. 110 *et seq.;* these contain a correspondence with Mr. James M. Brown, President of the American Humane Association, which commenced on Oct. 4th, 1900. Professor Keen's polite and crushing rejoinder to Mr. Brown would have afforded keen joy to those past masters in the art of flattening out controversial opponents, the late Professors Huxley and Goldwin Smith.

LIBRARY TABLE.

Health for the Middle Aged. By SEYMOUR TAYLOR, M.D. Aberd., F.R.C.P. Lond. London: Methuen and Co. 1915. Price 1s. net.—In writing this excellent little book for laymen, Dr. Seymour Taylor has confined himself to useful generalities, excluding technical medical terms and giving advice as to the conduct of daily life that anybody should be able to understand and take. He who would live long should above all things be moderate in four indulgences—namely, eating, alcohol, tobacco (the cigarette habit is specially barred), and exercise. In addition Dr. Taylor recommends plenty of sleep, absence of worry, and the investment of cash in an annuity or insurance policy. The book may be warmly recommended to the middle aged, for whom it is written, though the advice will often reach them too late. For its perusal suggests the thought that the habits formed in youth are not readily altered in the second half of life. Much of the good advice it contains may be found in the old saw of the medical school at Salerno, dating, appropriately enough, from the Middle Ages:

> Si tibi deficiant medici, medici tibi fiant
> Haec tria; mens hilaris, requies, moderata diaeta.

An Introduction to School Hygiene. By W. B. DRUMMOND, M.B., C.M. Edin., F.R.C.P. Edin. With illustrations. London: Edward Arnold. 1915. Pp. 237. Price 3s. 6d.—This little work on school hygiene is written for teachers and students of education. Since the introduction of the medical inspector into the school teachers have shown a commendable interest in all those factors which directly influence the health of their pupils and indirectly their learning capacity. Although many works have been published on school hygiene most of them are too medical or too technical for the average assistant teacher in an elementary school. Dr. Drummond has successfully found the *via media* between the too scientific and the too popular. He explains in quite simple language how defects in the organs of special sense, the eye and the ear, may be discovered by an intelligent and observant teacher, and how unhygienic and insanitary conditions may detrimentally influence the physical health of school children and consequently their capacity for acquiring knowledge. A whole chapter, and a very useful one, is devoted to the care of the voice and the defects of speech. Professor Wyllie's classification, physiological alphabet, and methods are described sufficiently plainly to enable the teacher to discover in his pupils the causes of many speech defects and their mode of correction. We are glad to notice that the author warns his readers against forced breathing, which, he says, may lead to stiffness and rigidity of the chest walls; and in this connexion it might have been of equal service if a timely warning had been offered against attempts at making children breathe through the nose when the nasal air passages are too narrow to permit of adequate respiration by this route. Considerable attention is devoted to the subjects of heating, lighting, and ventilation, but the information afforded is highly practical and free from scientific technicalities. On school buildings some useful observations will be found, and a model plan on the Staffordshire type is commended to the notice of teachers as fulfilling at the least expense most of the admitted requirements. The central hall with its inherent faults and impediments to cross-ventilation is condemned, although the compactness which the system affords is admitted to facilitate mechanical ventilation—an advantage that the author cynically observes will appeal to those who regard this kind of ventilation as an end and not as a means. As a short, interesting, and up-to-date introduction to school hygiene we strongly commend Dr. Drummond's little book to the notice of educationists.

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[1] The Times, April 15th.

Glaucoma: A Symposium Presented at a Meeting of the Chicago Ophthalmological Society, Nov. 17th, 1913. Edited by WILLIS O. NANCE, M.D., President of the Chicago Ophthalmological Society (1913), and WESLEY HAMILTON PECK, M.D., President of the Chicago Ophthalmological Society. Chicago: Chicago Medical Book Company. 1914. Pp. 150. Price 6*s*.—In this symposium on glaucoma the whole subject is reviewed from various standpoints by well-known American ophthalmologists, and Lieutenant-Colonel R. H. Elliot, I.M.S., the only Englishman contributing, deals with the operation of trephining which he has so ably advocated. Operations other than scleral trephining for the relief of glaucoma are described by Dr. Casey A. Wood. The etiology and classification of glaucoma are reviewed by Dr. Edward Jackson, the pathology by Dr. John E. Weeks, and treatment by non-surgical measures by Dr. George E. de Schweinitz. None of the papers is really exhaustive, but all are good and contain instructive material. The paper by Dr. de Schweinitz is particularly noteworthy for its completeness and sound sense. Much as all ophthalmologists appreciate the value of trephining, it is well to be reminded, as Dr. de Schweinitz reminds us, that "increased tension is not the whole story of glaucoma, and a filtering cicatrix is not the last word in surgical therapeutics, but there is much to learn."

Bibby's Book on Milk. Section II., The Law relating to the Sale of Milk. Fourth edition. 1914. Liverpool: J. Bibby and Sons. Pp. 256. Price 4*s*. net.—In addition to articles on the history of the law as affecting the trade of milk, with criticism of its administration and suggestions for its amendment, this volume will be found to contain a good deal of miscellaneous information, not always available in legal text-books, in the form of copious extracts from reported cases. These include not only those reported in the lawyer's sense—i.e., published as decisions of the higher courts in the accepted law reports—but cases in courts of summary jurisdiction, which may throw light upon the practical working of the law relating to adulteration and other topics, but which usually are not available for the purpose of reference. Explanatory notes on the Food and Drugs Acts, extracted, with acknowledgment, from Stone's Justices' Manual, Bell's Sale of Food and Drugs Acts, and Mr. Hedderwick's volume on the same subject, summarise in a convenient manner information capable of being of use to those whose duty it is to safeguard the food-supply of the public.

JOURNALS.

Journal of Anatomy and Physiology. Conducted by Sir WILLIAM TURNER, K.C.B., Professor ALEX. MACALISTER, Professor ARTHUR THOMSON, Professor ARTHUR KEITH, and Professor ARTHUR ROBINSON. Vol. XLIX. Third Series, Vol. X., Part III. April, 1915. London: Charles Griffin and Co. Annual subscription, 21*s*., post free.—Apparently there is no portion of the human body that can be exhausted as a subject for the researches even of gross anatomy. It certainly seems that it is impossible to come to an end of the anatomy of the femur. Within the last two years the femur has been the subject of a great many papers, and yet Dr. Thomas Walmsley in his two studies has managed to find plenty of new material. His first contribution deals with certain structural details of the neck of the femur, and the second with the neck of the femur as a static problem; and we are of opinion that both these contributions will prove the stimulus to further work. Both studies are of great interest and are permanent and solid contributions to the literature of the femur. We would remind the author that both H. Cloquet and J. Cloquet were surgeons and anatomists.—Another careful study is that by Dr. R. J. M'Connell on the Topographical and Applied Anatomy of the Gall-bladder and Bile-ducts, a paper the type of which we have rather missed from the journal of late. The illustrations are particularly good, and in them one can detect what one may express with admiration as the influence of the Belfast school.—Anomalies are dealt with in the remaining papers. Dr. James C. Brash describes in great detail a vertebral column with six and a half cervical and 13 true thoracic vertebræ, with associated anomalies of the cervical spinal cord and nerves. The column was obtained from a male subject aged 61, and it is an extremely anomalous one of a type not uncommon in malformed fœtuses. Dr. Brash has made a very exhaustive study of the spinal column, the spinal cord and nerves, and he concludes (we believe quite rightly) that the "bone condition is secondary to the nerve anomaly."—Two cases of Cervical Ribs are described by Miss M. F. Lucas (here designated as "Mr."). The paper is one which we hope will be imitated, since the arrangement of all the vertebral elements and the constituents of the limb plexuses are recorded in detail. The anomalies are found not infrequently in the dissecting room, and it is only by records such as these that the study of the subject is likely to be advanced. Too often the associated parts, which alone may help in an understanding of the condition, are dissected away or disregarded when note is made of the anomaly. The paper is well illustrated.—Miss Lucas also contributes a paper on an Anomalous Arrangement of the Vagi. At first sight the case is a remarkable one, for the usual spiral arrangement of the vagi on the œsophagus is exactly reversed, the right nerve lying in front of, and the left behind a normally situated œsophagus and stomach. The author, however, concludes that only an exaggeration of a not infrequent type of resolution of the plexus gulæ is present.—Dr. Douglas G. Reid continues his studies of the disposition of the peritoneum with a contribution on Appendices Epiploicæ and Pericolic Membranes.—Under Anatomical Notes Professor E. Fawcett describes and illustrates two rare and interesting cases. The first is that of an internal mammary artery arising from the thyroid axis; the second is an instance of the rare condition of the external semilunar cartilage forming a complete circular disc covering the external tibial facet. There is surely a misprint in the statement that "Bruce Clarke saw three such cases in one *limb*."

The Philippine Journal of Tropical Medicine, Vol. IX., No. 6.—The first article of this number is by Dr. E. H. Ruediger, who writes upon the subject of the germicidal power of glycerine on various micro-organisms under differing conditions. From his experiments he concludes that glycerine has a distinct though feeble germicidal action, and that it seems to be a selective poison for the bacillus of plague, the spirillum of cholera, and the bacillus of diphtheria. In 50 per cent. of glycerine in physiological salt solution all the non-sporing organisms died in less than four days. Dr. Ruediger makes no reference to the fact that for nearly 20 years the bactericidal action of glycerine has been used to remove the extraneous organisms from vaccine lymph in England and other European countries.—Dr. Otto Schöbl has been carrying out researches on the vitality of cholera vibrios in Manila waters. He has found that these vibrios remained longer alive in less polluted waters than in those more highly contaminated, and that the organisms disappeared earliest from distilled water, remaining most numerous in the sea water.—The morphology of the adults of the filaria found in the Philippine Islands is described by Dr. Ernest Linwood Walker, who expresses the opinion that the Philippine filaria is identical with F. bancrofti.—Dr. Honoria Acosta Sison, of the Department of Obstetrics in the University of the Philippines, contributes an article on pelvimetry and cephalometry among the Filipinas. From her observations she finds that the Filipino pelvis is smaller than that of the American or European, and this may to some extent be explained by the smaller stature of the Filipino race. The transverse diameters of the Filipino pelvis, except the transverse diameter of the pelvic outlet, are smaller than those of the European or American. The relative enlargement of the transverse diameter of the pelvic outlet may be explained by the habitual squatting position that the Filipinas assume, and by the fact that the carrying of the child astride the hips of the mother or nurse may also affect the child in the transverse diameter of its pelvic outlet. The head of the newly born infant is proportionate with the Filipino pelvis.—Dr. R. B. Gibson supplies a note on the physiological action of the proteoses, and the same writer in conjunction with Dr. Isabelo Concepcion furnishes a paper on the lymphagogic action of the Philippine mango, Mangifera indica (Linnæus).—Dr. Concepcion also contributes some observations on mango rash. It appears that transient eruptions of an erythematous type occur in the natives of the Philippines during the hot season, and are attributed popularly to the eating of mangos. Dr. Concepcion extended the observations to ascertain if the fruit had any influence in this respect upon infants through the mother's milk. Four newly confined mothers in the obstetrical ward of the Philippine General Hospital were selected for experiment and were given six mangos daily with their meals. In all the cases except one rashes were produced on both mother and child. It is believed that the babies are more susceptible than the mothers.—An interesting instance of milk poisoning due to a type of staphylococcus albus occurring in the udder of a healthy cow is described by Dr. M. A. Barber. The symptoms produced resembled those of so-called ptomaine poisoning. The cases occurred from time to time on a certain farm, and extended over a period of about four years. The particular cow whose udder was discovered to be infected had been imported from Australia. The fresh milk was harmless, but when it had stood for some hours at a room temperature a toxin was developed in sufficient quantity to give rise to acute gastric disturbance. Culturally the toxin-producing staphylococcus differed little from a non-toxin producing strain, except that the former produced acid in mannite and maltose litmus agars. This number completes Vol. IX.

ERRATUM.—In the review of Sir Edward Schäfer's "Introduction to the Study of the Endocrine Glands and Internal Secretions," published last week on p. 970 of THE LANCET, Sir Edward Schäfer's newly coined word "autacoid" was spelt "antacoid" by a printer's error. We take this opportunity to correct the mistake; the word "autacoid," derived from the Greek *ἀυτός*, self, and *ἄκος*, a medicinal agent or remedy, was applied to the specific hormones and chalones of internal secretions in order to draw attention to the way in which their action resembles the action of drugs, such as the vegetable alkaloids.

THE late Mrs. T. Aitken has left £10,000 each to the Ramsbottom Cottage Hospital and the Aitken Sanatorium for Consumption at Holcombe, near Bury.

AN ANALYSIS OF THE NATURAL MINERAL WATERS OF VERGÉZE, FRANCE (SOURCE PERRIER).

INASMUCH as Perrier water is supplied to this country in very large quantities, and is rapidly increasing in popularity, an independent examination of it from a hygienic point of view may be held to be desirable in the public interest. We have been asked to give a detailed opinion of the suitability of Perrier water for table purposes based upon a consideration of the conditions under which the water is bottled and sent to the consumer, and upon the results of our own chemical and bacteriological examinations of the water.

We have received samples direct from the springs and have made our own purchase of samples upon the market, all of which have been submitted to chemical and bacteriological examination. The samples examined included two taken from the springs, the first not being under pressure, and the second having been aerated with the natural gas which escapes in large quantities from the springs.

The results of the bacteriological and chemical examinations of these samples were compared with those obtained with the samples representing those purchased by the public, and this comparison appears in the figures given below. In addition, we have made certain inquiries as to the situation of the springs and as to the methods of bottling the water, which, of course, needs to be carefully carried out in order to preserve the water in a state of purity desirable for drinking purposes.

Source Perrier owes its name, it is interesting in passing to remark, to a well-known medical man, Dr. Louis Perrier, of Nimes, a town situated some nine miles away from the springs at Vergéze, Gard. There is abundant evidence to show that the springs were known to the Romans, but not until recent times was it realised that "the boiling springs"—"les bouillens," as they are locally called—might furnish a plentiful supply of natural aerated water for table purposes. Chiefly through Dr. Perrier's energy the plant and machinery for bottling in bulk was installed near the springs, and this natural sparkling table water soon enjoyed a considerable patronage not only in France but in this country also.

The complete purity of both the natural water and carbonic acid gas demands very careful watching in the bottling process in order to avoid the slightest departure from a high standard, and the natural circumstances well assist the efforts of the proprietors. The springs are situated in the midst of fields and vineyards far from human habitations. They rise in the Cevennes mountains, visible at a distance of some miles, and thence flowing underground through sandstone, clay, and chalk, emerge to the surface at Vergéze, in the Midi, and some twenty miles from the sea coast in the direction of Montpellier. Of the springs available the one chosen for bottling purposes is the least mineralised. Special precautions are taken to bottle the water under the cleanliest conditions possible. To this end the bottles are subjected to a thorough washing process effected by machinery, and all pipes conveying gas and water and the aerating plant itself are kept scrupulously clean. If strict attention was not practised in any one of these directions the bottled water would not pass the requirements of both chemical and bacteriological standards of purity, in spite of the purity of the springs themselves.

Chemical Composition of Perrier Water.

According to an analysis made in THE LANCET Laboratory, samples of the water taken directly from the source, both still and sparkling, and samples procured on the market, show the following composition in regard to mineral ingredients, the results being given in grains per gallon :—

TABLE I.—*Chemical Composition.*

	Still from source.	Sparkling from source.	Market sample.
Calcium carbonate	26·04	28·00	29·40
,, sulphate	3·22	3·22	3·22
Magnesium carbonate	0·63	0·42	0·42
Sodium chloride	2·60	2·60	2·00
Silica	1·68	1·12	1·12
Total mineral matters ...	34·17	35·36	36·16

The water of Source Perrier thus belongs to the group of natural springs classed as "indifferent" or simple "acidulous" waters. It contains no active medicinal constituent. In a table water in constant use the presence of such may be undesirable. Even considering the total quantity of salts present, it is clear that the mineralisation is very moderate, and the chief constituent is carbonate of calcium dissolved in carbonic acid gas. The total salts amount to an average of 35 grains per gallon, or a little over 4 grains per pint, of which about three-fourths is carbonate of calcium. This salt in solution, of course, gives the water some antacid properties and, no doubt, adds to its palatability. A small quantity of sulphate of calcium is present also, confirming the statement as to the flow of the water through calcareous bearings, which are well known to furnish the purest water for potable purposes. Sodium chloride occurs only to the extent of 2 grains or so to the gallon, a quantity which can have very little importance from a therapeutic or palatable point of view. The analyses of the various samples obtained establish the identification of the water procured in the open market with the waters directly from the source, and further show that it is remarkably constant in composition.

Organic Purity of Perrier Water.

The same samples were next examined for organic purity by chemical analysis, and for this purpose the estimation of the free ammonia, albuminoid ammonia, nitrogen in nitrates, and oxygen absorbed was decided upon.

The following were the results given in parts per 100,000 :—

TABLE II.—*Organic Purity.*

	Still from source.	Sparkling from source.	Market sample.
Free ammonia	0·0006	Trace	Trace.
Albuminoid ammonia ...	0·0006	Trace	0·0007
Nitrogen in nitrates	0·4300	0·4100	0·4000
Oxygen absorbed	0·0280	0·0200	0·0400

A sample of the water from the spring and a sample also procured on the market were submitted to bacteriological analysis.

The sample taken direct from the spring without any special precautions gave the following results :—

Growth from 1/10 c.c.	Colonies per 1 c.c.
In gelatin at 22° C.	2680
In agar at 37° C.	810

There was no evidence of the presence of bacillus coli when operating on 200 c.c., 100 c.c., 10 c.c., 1 c.c., and 0·1 c.c. respectively, and the organisms present are of no importance pathologically. The complete absence of coliform organisms or streptococci is remarkable, and shows the water is well guarded from contamination. The sample procured on the open market gave still more striking results. It contained neither bacteria in 1 c.c. nor bacillus coli in 100 c.c., and the water is thus seen to be sterile.

In Table II. are recorded the results of examination in regard to organic purity based upon the estimation of free ammonia, albuminoid ammonia, nitrogen in nitrates, and the oxygen absorbed from a weak permanganate solution. The figures obtained demonstrate an unusual degree of organic purity which, in fact, surpasses that of most of the public water supplies. This speaks well for the precautions taken to guard the source from contamination and for the cleanliness of the bottling processes. Perrier is thus an exceptionally pure water.

Bacterial Purity of the Water.

Consistently with the high degree of organic purity revealed by chemical examination the bacteriological results negatived contamination. Samples of Perrier water procured on the market were, in fact, shown to be sterile, no ordinary water bacteria being present, and a search for bacillus coli failed to find this organism, even when 100 c.c. of the water was examined. In the sample obtained direct from the spring some harmless water bacteria were found, but again no bacillus coli. There are few natural waters which would not show bacteria present in 1 c.c., the deep well water showing the least, and the river or surface water the most number. It seems clear that Perrier water is derived from a very deep source, which accounts for its bacterial purity, and this purity is maintained up to the time it reaches the consumer, the risks entailed by collecting and bottling being removed by scrupulous care in the processes. These results incidentally point also to the bacteriological purity of the natural carbonic acid gas and of the cleanliness observed in the aeration process.

The Natural Carbonic Acid Gas of the Perrier Springs.

The carbonic acid gas was carefully collected from a bottle of Perrier water and examined. It proved to contain 99·65 per cent. of pure carbonic acid gas, the residue, 0·35 per cent., consisting of about equal volumes of nitrogen and oxygen.

Conclusions.

These results of analyses show that Perrier water can stand the most exacting ordeal required by chemical and bacteriological investigation in regard to questions of purity. It possesses no objectionable mineral salts, is organically pure, and is perfectly free from harmful bacterial life. The samples obtained upon the market were, in fact, sterile. Such findings afford a strong recommendation in regard to any potable water, and in a water pleasantly aerated with the natural carbonic acid gas of the springs the result is particularly satisfactory. The care taken to preserve the water in its pure state on its way from the springs to the consumer has clearly been complete. The advantages of natural carbonic acid gas in table waters are still a matter of controversy, some maintaining that the chemically prepared gas is less easily assimilable. There is one important difference which is noticeable when natural gas is used, and that is, it gives a softer and pleasanter taste to the water and renders it more palatable and digestible. For some reason artificial gas gives a sharper, more strongly acid taste to table water than does the natural gas, and this may well prove to be a dietetic disadvantage. Some medical men in France attach great importance to the use of natural gas for aeration purposes and attribute to it a more favourable action on the gastric processes, but it is generally agreed that the moderate use of aerated beverages promotes digestion and stimulates the motor activity of the stomach. There is evidence that they help digestion also by a mechanical process, the bubbling up of the gas through the stomach contents facilitating their disintegration. The natural effervescing waters appear also to influence osmotic processes to a greater degree than artificial mineral waters, and thus increase the powers of absorption and promote diuretic action.

It may be added that Perrier water has been systematically and periodically examined by Dr. Wilson Hake, lecturer on chemistry and toxicology in the Westminster Hospital Medical School, since the water was placed upon the market in 1904 to the present time. The many results he has thus obtained in his controls show no appreciable deviation from his first figures, and our recent analyses confirm his work in all significant particulars.

THE PEREIRA MEDAL.—At the May meeting of the council of the Pharmaceutical Society the Pereira medal was adjudicated to Miss Dora F. White. This medal—which is generally regarded as the blue ribbon of pharmacy—was struck in 1861 in memory of Jonathan Pereira, the great authority on materia medica, and has been awarded annually ever since. This is the second time it has been won by a woman pharmacist. The Pharmaceutical Society's silver medal has been won by Mr. A. J. Somes and the bronze medal by Mr. R. W. Bowles.

THE LANCET.

LONDON: SATURDAY, MAY 15, 1915.

The Scarcity of Medical Men: The Proposal of the Pharmaceutical Society.

SOON after mobilisation it was realised that the wave of enthusiasm for active service was likely to affect the number of medical students presenting themselves for examination. From all medical schools came accounts, not only of diminished entries of new students, but of the serious depletion in the ranks of students who had already reached their third and fourth year of medical studies. The desire to be on active service in defence of the realm had led many to enlist, and it was therefore realised that, unless some means of adjusting the balance could be devised, there was likely to be a serious shortage in the supply of medical men for the future needs of the nation. This difficulty, which is entirely disconnected with the immediate needs of the Army Medical Service, was early recognised by the President of the General Medical Council, and on his representation an order was issued releasing from the responsibilities of enlistment which they had incurred all medical students in their third or fourth year, so that they might be able to resume the normal course of their work and fit themselves for qualification at the earliest possible date. It was realised that these men, who had already gone through several years of training in the preliminary subjects, would be far more useful to the nation in their medical capacity than they could possibly be as simple units in the army. As these young men become qualified they will probably join the Royal Army Medical Corps if the war still goes on. In this service the younger men are likely to be more pliant and more ready cheerfully to carry out orders in face of difficulties than older men, who might naturally resent having their instructions given to them by officers who, though superior in rank, must be younger in years. But while the younger men obtain in this way an enviable pride of place, the older men, whom circumstances have reserved for home service, are meeting the needs of the civilian population with alacrity, and are displaying a willing readiness to adapt themselves to war conditions. In many cases work that has hitherto been done by younger members of the profession must be distributed amongst those who had thought that their period of drudgery was over. The rush for the Army Medical Service has naturally involved in difficulties many public institutions. The conditions of resident appointments have been relaxed, with the result that many appointments, both as residents and as pharmacists, have been filled by people of far more than the usual age, or by women. But these changes may be regarded as temporary. It is to be anticipated that, when the war is over, those who have been serving abroad, and who desire to return to their former sphere of work, will find it easy to do so.

In common fairness to those medical men who have temporarily given up their work in this country, it is essential that no steps should be taken which would place them at a disadvantage when the needs of the army no longer call for their services. There has been displayed a spirit of *camaraderie* by which medical men have undertaken to carry on the work of absent neighbours as though they were partners, and where such arrangements have been made general practitioners will, in all probability, speedily be able to resume their practices. There remains, however, the scarcity of medical men owing to the absorption of the youth of the nation on active service—we do not know what the measure of this scarcity may be, but we are sure it has been exaggerated. Letters have been published in the *Pharmaceutical Journal* holding out that the present affords an opportunity for pharmacists to enter the medical profession. It has been urged that special facilities should be granted to those who have already qualified as pharmacists, and the proposal seems to have culminated in active measures being taken by the Pharmaceutical Society. The writers of the letters believe that many pharmacists would enter the medical profession if the present regulations were temporarily altered, and it is suggested that, if the examinations they have already passed were allowed to rank at full value, the numbers of men in the medical profession might speedily be increased. It is stated by one contributor to the correspondence that this would benefit both the medical profession, in which there is such a scarcity of men, and the pharmaceutical profession, which is suffering in some districts from an unmistakable plethora. It is not pointed out in what way members of the medical profession are to be benefited by finding their numbers largely increased when they return from active service. Perhaps the idea is that with greater competition there may be less work for each individual, but this may not produce a living wage without strenuous effort and much anxiety.

The concessions suggested for pharmacists are: (1) Exemption from the Preliminary Examination and from matriculation; (2) exemption from chemistry and botany in the First Professional Examination; and (3) exemption from materia medica and pharmacy in the Second Professional Examination. While the movement was confined to correspondence it was right to take no notice of it, even though it was urged that chemists' associations throughout the country should get up a petition to the Pharmaceutical Society asking the Council to approach the medical or Government authorities with a view to modifying the curriculum. The question, however, has now been crystallised by a letter to the Registrar of the General Medical Council, officially addressed to him by the direction of the President of the Pharmaceutical Society. This letter definitely asks that qualified pharmacists may be excused the Preliminary Medical Examination and such parts of the qualifying examination as are included in the subjects which pharmacists have to pass in order to qualify under the Pharmacy Acts. It would seem to be somewhat unlikely that much sympathy will be shown by the General Medical Council towards this relaxation of medical examinations, while it is highly improbable that any of the aspirants for medical qualifications could be qualified in time to take active service in the army during the war. If they are unable to help the nation in this way, it would seem that the only benefit resulting from any compliance with their requests would be a benefit to the individual pharmacists concerned; while, on the other hand, medical men now serving at the front might, within a few years, find the ranks of the medical profession inconveniently crowded. We have no desire to oppose the entrance of pharmacists to our ranks. There are already numerous instances of medical men who have attained professional eminence after having steadily gone through the full course of study of both departments; but this should not lead to any hasty alteration of a curriculum which has been gradually and carefully evolved with such great benefit to scientific medicine. While we are sure that the General Medical Council will not be influenced by the spirit of antagonism recently displayed towards it by some of the members of the Pharmaceutical Society, we trust that the reply given will be firm, judicious, and unmistakable in its purport.

Chlorine Poisoning.

There remains little doubt that the gas employed by the Germans against our soldiers in the trenches was chlorine. The evidence of the newspapers and the descriptions of the sufferings of the "gassed" pointed, as we said in our issue of May 1st, to one conclusion—namely, that chlorine was the disastrous agent used. Chlorine is cheap, can be preserved in liquid form, or generated from bleaching-powder cubes, and as it is nearly two and a half times as heavy as the air it is capable of manipulation. Investigations have now been conducted on the bodies of the victims, and the observations made coincide closely with those recorded from time to time in industrial cases of chlorine poisoning. The following case, given in Dr. Witthaus's "Manual of Toxicology," sets out, for example, a train of symptoms which are typical and which show a remarkable accordance with the symptoms displayed by the poisoned victims at Ypres. The patient described by Dr. Witthaus had inhaled a small quantity of the pure gas. He immediately experienced an inclination to cough, and complained of dyspnœa and a stabbing pain in the chest, which continued through the evening and became still worse the next morning when the dyspnœa was intense, and coughing was almost uninterrupted. The patient was greatly excited and spoke only with difficulty. The heart impulse was not perceptible, but the heart sounds were clear. Sibilant râles were heard, particularly to the right and above. The face was cyanosed. The dyspnœa now increased markedly, every respiratory muscle was called into play, the movements of respiration were short, there was cyanosis, and the pulse was very frequent and small. The patient slept occasionally for half an hour, woke struggling, the pulse became imperceptible, there were râles in the throat, and he died about 48 hours after the inhalation. There need be no question as to whether the Germans appreciated the horrible fate to which they were condemning the victims of chlorine inhalation—the tortures of the death were common knowledge.

Chlorine and its compounds appear to result in the formation of hydrochloric acid in contact with the moist mucous membranes, and the symptoms are generally a sensation of suffocation, difficulty of breathing, and lacrymation. The gas severely attacks the respiratory organs, bronchial catarrh, inflammation of the lungs with frothy blood-stained expectoration supervening. Apart from the method of pouring chlorine gas into the air intended to travel in the direction of the opposing forces, the Germans have apparently contrived to despatch the gas by means of shells, and one officer's experience of the bursting of these outrageous missiles is of interest as confirming the effects recorded in cases of industrial poisoning. On the bursting of these shells, he states, a green gas was developed, and before he and his comrades had a chance of moving they were inhaling the poisonous gas and a moment later they were struggling terribly for breath. Two of the men died before his eyes, which afforded a horrible sight, "for they had turned quite blue." He escaped with others owing, he thought, to the fact that they had stuffed their handkerchiefs into their mouths. They felt at the time, however, that suffocation was inevitable, and afterwards they experienced the discomforts which follow an attack of bronchitis in its most virulent form. He had no doubt at all, in his own mind, that the gas in the shells and the curtain of "creeping gas" were of the same nature. It is generally stated that chlorine gas in the proportion of as little as 0·04 to 0·06 per 1000 taken into the lungs is dangerous to life, and the effects, for all intents and purposes, are much the same as those of hydrochloric acid gas. But of course the formation of hydrochloric acid due to chlorine acting upon moist membranes means that it is present in the nascent form, in which form it is far more active—that is to say destructive.

The question of replying to this new and revolting form of warfare by similar application to the forces and resources of chemistry has been freely discussed. Chlorine is certainly as available for the Allies as for Germany, but the method is full of uncertainties, particularly when the letting loose of the gas into air currents calculated to reach the enemy is relied upon. Already it has been reported that the German calculations sometimes failed and that the attacking party received the gas by return currents. The method at any rate can only have relatively local effects, and its success has been much due to the surprise and terror which it momentarily caused. If the Allies decide to retaliate, as they have every right to do, they may be depended to improve on the infamous example set them. This country possesses enormous resources in regard to the manufacture of chlorine and its compounds. This is seen in the fact that while England produces about 200,000 tons of bleaching powder (the chief reservoir of chlorine output), France produces 60,000 tons, and Germany 100,000 tons. But at the present time ingenuity is being exercised only for defensive purposes. The distribution of chlorine in explosive shells may offer a serious problem unless effective means are found to ward off attacks by means of "anti-chlor" saturated respirators. Of the numerous "anti-chlors" available hyposulphite of soda is the best; the respirators found on captured German soldiers proved to be moistened with hyposulphite, confirming the conclusion that the gas used was chlorine. Next to hyposulphite common carbonate of soda is most efficacious. Failing these the respirator moistened with water would undoubtedly serve to reduce the severity of the attack. The Germans have probably employed liquid chlorine, of which they make large quantities in steel cylinders for industrial purposes. It is used for displacing bromine from the bromide liquors of the Stassfurt mines, and for the production of chloracetic acid, which is essential in the synthetic preparations of artificial indigo. The use of chlorine gas as an offensive weapon is new; its employment as a defensive weapon in the sterilisation of water for drinking purposes has for some time been recognised as effective. Civilised nations will agree, in the name of humanity, that its powers to destroy should be confined to low organisms. It may be suggested that just as war is war, so chemistry is chemistry, and that the use of one disastrous chemical agent is no more morally wrong than the use of another. Yet we must all feel that there is a vast difference between the skill of arms and the skill of the poisoner.

UNIVERSITY OF SHEFFIELD.—The Council, at its last meeting, appointed Mr. J. Sholto C. Douglas, M.A., D.M., B.Ch. Oxon., M.Sc. Birm., to the John Hunter chair of pathology, in succession to Professor H. R. Dean. Dr. Douglas is at present lecturer on pathology in the University of Manchester.

Annotations.

"Ne quid nimis."

THE SINKING OF THE "LUSITANIA": FATE OF MADAME DEPAGE.

THE sinking of the *Lusitania* is universally accepted as the crowning infamy in the German conduct of the war up to the date of its occurrence. The crime has been received with a chorus of horror throughout the world. True, when analysed, the deed is no baser than the murder of unfortunate fishermen in the North Sea, than the use of virulent gases in the trenches, or than the deliberate assassination of wounded prisoners—all of which proceedings we learn from authentic reports have marked the conduct of the war by the Germans during the recent weeks. Yet the cynicism of an action which condemned in a moment helpless women and children in crowds to a terrible death has impressed civilisation more than any other of the horrors which have followed upon the frequent breaches of international convention during the war. But the impression has not been that which presumably the Germans expected; disgust and resolute anger have been aroused, not shuddering fear.

To many of the medical profession the tragic fate of the *Lusitania* has a particular sadness, because one of the ill-starred passengers was Madame Depage, of Brussels. The deepest feelings of sympathy will be extended to Professor Depage on the tragic death of his wife. Madame Depage was on her way back from a tour in the United States to obtain funds for wounded Belgians in the Depage Hospital at La Panne. The generous mission was devotedly undertaken at great personal sacrifice, and now that it has ended in death a sense of personal grief will be experienced by the many friends in England whom she had so often welcomed at her house in the Avenue Louise, Brussels. The members of the Société Internationale de Chirurgie will, we are sure, not quickly forget her graciousness as a hostess, her wonderful power of organisation, her gaiety, her great linguistic powers, and the tact which enabled her to harmonise the clashing interests of a polyglot assembly. Last year she accompanied Professor Depage to the United States as the wife of the President of the Société Internationale de Chirurgie; and no better suppliant with the American people on behalf of Belgium could have been found. Bravely she left her husband and her children out of love of her stricken nation, and she has died in her country's cause.

THE SPIRIT DUTIES.

THE drastic proposals of the Chancellor of the Exchequer in regard to levying additional duties on wines and spirits have been withdrawn, and the suggestion we made in our columns three weeks ago has been adopted in principle. This was that the sale of immature spirits should be stopped by a system of compulsory bonding. Time is to be given to the industry to find the accommodation necessary for storage. Spirits up to two years will be compulsorily bonded, and a surtax is suggested to be levied on all spirits taken out of bond between two and three years of age. After that time it may be presumed that no surtax will be charged. The wine duties are not to be raised. There is to be a State control of all licensed houses in munition areas, and for this purpose a central board has been created composed of representatives of the Admiralty, War Office, and Home Office. On the whole a wise compromise has been reached and the proposals promise to offer a satisfactory settlement. They should remove, also, all anxiety as to the spirit used for medicinal purposes being further taxed.

NOTABLE REDUCTION OF TYPHOID FEVER IN ITALY.

It is only of late years that Italy has begun to apply large measures of sanitation to her whole united population. To many of us, accustomed to the better hygienic environment of our own country, residence in Italy has always caused anxiety, especially in regard to the possibility of contracting typhoid fever, and in some places this anxiety has been justified. But recently Italy has been very literally setting her house in order, and the risks of typhoid fever have much abated. We are just now more concerned for the possible fighting strength of the Italian army than for the security of the rare tourists of our own nationality who may be in Italy, but on both accounts it is good to learn of the general improvement in public health indicated by the decline in frequency of typhoid fever. The fighting strength of an army is naturally enhanced if it is recruited from healthy material. When the troops come from towns and villages where typhoid epidemics are frequent there is a greater danger that the army itself will be infected. This is often left out of calculation, the health of those with the colours being considered as though it can be independent of the conditions where the levies are raised. In Italy financial facilities for public health works, such as water-supply and drainage, have been greatly accelerated by the Public Health Acts of July 13th, 1905, and June 25th, 1911. It is especially in respect to small and poor districts that the State guarantees the interest on the money borrowed for sanitary purposes. Thus from July, 1905, to July, 1911, no less than 337 districts or communes received State aid for their water-supply works. During the same period 763 communes obtained financial aid for other public health undertakings, such as the building of isolation hospitals, improved drainage, &c. The result has been specially noticeable in regard to the prevalence of typhoid fever. Professor Santoliquido is responsible for the following figures. The cases of typhoid fever notified in 1888 amounted to 59,631, and there were 23,869 deaths; but in 1912 the number of cases was reduced to 30,558 and deaths to 7743. This means that whereas in 1888 there were 800 deaths from typhoid fever out of every million inhabitants, the proportion per million was only 221 in 1912. Of course, it may be said that these were exceptional years, and to a certain extent this is true, because they represent the highest and the lowest figure. Nevertheless, the reduction, while showing certain fluctuations, has been persistent. Thus the fall was gradual from 1880 to 1894, when the proportion of deaths per million of the population was only 439; but it rose again the following two years to 498, then to 520. In 1897 it was 491, and the year following 545. After that the figure never again attained to 500; and after the year 1900 it was always below 400. Finally, after the year 1905 the proportion of deaths from typhoid fever has always been below 300 per 1,000,000 inhabitants. We have therefore good reason to hope that the prevalence of typhoid fever has been definitely reduced by about two-thirds. This is no mean achievement, and the Italian authorities are to be congratulated.

UNUSUAL SYMPTOMS DUE TO GALL-STONES.

In another column we publish an interesting note on a case of gall-stones described by Dr. A. R. Neligan. The usual symptomatology of cholelithiasis is generally recognised, such as paroxysmal pain, vomiting, collapse, jaundice, and the presence of gall-stones in the motions, to which may be added the occurrence of ague-like attacks. During an attack of biliary colic the contents of the stomach are first vomited, and bile may also be present, but it is only in very rare instances that a calculus is vomited. In Dr. Neligan's case, however, a number of faceted gall-stones were found (about 30) in the vomit. We have been unable to find a similar record. In addition, the patient suffered from intestinal obstruction; an operation was recommended but refused, and after the administration of enemata she passed some flatus, liquid fæces, and a hard mass which subsequently proved to be a gall-stone. Unfortunately it was broken up before Dr. Neligan saw it, but apparently it must have been roughly round in shape and 3 centimetres in diameter, and must have weighed about 16 grammes. Mechanical obstruction of the intestines by a gall-stone is also uncommon, but many cases have been reported. Morestin[1] was able to refer to as many as 242 cases. Dr. H. D. Rolleston[2] states that the relative frequency of this cause to other causes of intestinal obstruction has been variously estimated at from 1 to 13 to 1 to 45. The occurrence of two unusual symptoms in the same patient—viz., the vomit of many gall-stones and the obstruction of the bowel by one such stone—is certainly remarkable, making the record of the case exceptionally interesting.

RADIOLOGICAL STUDIES OF THE LARGE INTESTINE.

Dr. A. E. Barclay, whose work on the alimentary tract is well known, contributes some interesting observations to the symposium on intestinal stasis in the current number of the *British Journal of Surgery*. Constipation is due less, he considers, to Lane's intestinal kinks than to an absence of what he terms *points d'appui*, from which, as fixed points, the mass movements of the fæces can be urged forward. These *points d'appui* appear to be variable in their site—they are never seen in the cæcum itself; more commonly such a point is found in the neighbourhood of the hepatic flexure. Under the X rays the mass is found to be pushed forward from the fixed point. Failure of such fixed points leads to inability of the large intestine mechanically to propel forwards, in the abrupt occasional and brief manner now recognised as typical, the fæcal mass. The "cess-pool," or loaded cæcum, under this view must be regarded less as the cause than the effect of such inefficient propelling action. This organ, in fact, is suggested to be little concerned in the propulsive action; it is often found to contain bismuth for a long time subsequent to its administration; it is not cleared out so effectively as are other parts within the sphere of the massed movements. Possibly the cæcum has a separate mechanism for mixing the contents and feeding them into the ascending colon preparatory to the occurrence of the mass movement. The significance of incompetence of the ileocæcal valve, a condition which Dr. Barclay confirms in his own observations in relation to chronic constipation, is not touched upon here. Not all cases of constipation are due to those motor disturbances of the large intestine thus described. Whilst stagnation of fæces in these cases is met with in the cæcum, the larger class of cases of constipation are due to stagnation in the rectum, a condition termed by Hertz "dyschezia." This is, however, a fault of defæcation rather than a true constipation. Dealing with the X ray findings in cases of neoplasm of the large intestine, the opaque enema is recommended in preference to oral administration. By the latter method it is only when the growth is very far advanced that definite banking up of the shadow behind the growth appears; generally, too, the head of the shadow seldom reaches the obstruction itself, suggesting hypertonicity of the colon above the site.

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[1] Bulletin de la Société Anatomique de Paris, 1900.

[2] Diseases of the Liver, 1905.

THE INEBRIATES ACT IN 1913.

IN submitting his report for 1913, with regard to institutions certified or licensed under the Inebriates Acts, 1879 to 1900, Dr. R. Welsh Branthwaite explains that owing to the pressure of other work both before and after the war he has been unable to incorporate observations on the medical aspects of inebriety in continuation of remarks made in a previous report. The report is therefore confined to the usual statistics relating to inmates of inebriate reformatories and retreats. As the total number of persons treated in these institutions has not been large many of the tables do not refer only to 1913, the year specially dealt with, but contain corresponding figures for each year since 1899, when the Act of 1898 came into force. Many of these are of interest, but attention may be specially called to one of them, because at the present time two topics upon which it has a more or less direct bearing are arresting public attention. It will be found that during the period included in the report, 1899 to 1913, there were in all 586 persons committed to certified inebriate reformatories for offences dealt with under Section 1 of the Act of 1898—that is to say from assizes and sessions. The nature of these offences is specified in the report, and it will be found that comparatively few involved conduct of the kind commonly regarded as seriously criminal in character. Only 47 persons in all were convicted of larceny, stealing and receiving, and 44 of attempted suicide, 13 of assault, and 7 of malicious wounding. In this connexion it is necessary, perhaps, to suggest that a very large number of serious offences due to inebriety are not so looked upon in the courts, but are punished in the usual way by imprisonment, without attempt at reformatory treatment. The one offence, however, which appears to be specially selected to be dealt with under the section mentioned is that of unlawfully neglecting children in a manner likely to cause them unnecessary suffering. Out of the 586 committals to inebriate reformatories referred to 459 were for offences of this kind, and as only 57 were men it will be seen that drunken mothers who neglect their children constitute a very large proportion of the persons sought to be reformed under Section 1. The "drink question" has been made prominent recently by delay alleged to be caused by intemperance in the production of munitions of war, and the figures cited above show a particular aspect of the effect likely to be produced by inebriety upon the rearing of a healthy generation of children, to compensate for the ghastly destruction of human life which the war is causing, and for the diminished birth-rate which may be expected in future years.

INJURIES OF THE PERIPHERAL NERVES.

INJURIES to the peripheral nerves are extremely common in warfare, and at the same time they form a class of case in which early and expert treatment is essential if the best results are to be obtained. At its meeting of March 4th the Société de Neurologie of Paris passed a resolution, which was forwarded to the French Minister of War, pointing out the extreme desirability of avoiding delay in transporting those with nerve injuries, and injuries of the nervous system generally, to the special neurological hospitals of Paris and elsewhere, since successful treatment depends on the care and minuteness with which the preliminary neurological investigation of such cases is prosecuted. The society points out how frequently the special hospitals are asked to take cases of traumatic neuritis in which, as the result of delay, fibro-tendinous retractions, sub-ankyloses, and other complications have supervened, which often prove rebellious to treatment. From a later number of the *Presse Médicale* we learn that improvement has taken place and that special neurological services have been established in connexion with various of the army hospitals. Similar utilisation of the expert neurological opinion of this country should be organised to its fullest extent, to obviate unsatisfactory results in cases treated originally, owing to stress of time and other circumstances, in an incomplete fashion. The French medical journals have contained a number of useful contributions to the study and treatment of traumatic lesions of the peripheral nerves. Among these may be mentioned a paper by M. Temoin, read before the Société de Chirurgie, emphasising the necessity of a complete motor, sensory, and electrical examination in all cases of peripheral nerve injury, to facilitate early and successful surgical intervention. M. Claude has given to the Académie de Médecine the results of 100 cases of peripheral nerve lesions operated on, and in the *Presse Médicale* of March 4th, with M. Vigouroux and M. Dumas, he records the results in a further series of 100 cases. All of these were examined by neurologists clinically and electrically before operation, and after operation they were given suitable secondary treatment. In a series of 56 cases there were 7 of complete section of a nerve trunk with separation of the ends, in 12 the nerve was cut across but the ends were together, in a fibrous development, in 21 the section was incomplete, 3 showed induration without section, and in 13 the nerve was compressed by perineural sclerosis. Apart from the complete sections, where improvement is a question of time mainly, in no fewer than 87 per cent. the result of surgical interference was amelioration of symptoms. In another series of 46 cases, improvement was obtained in 74 per cent. The paper contains useful hints for the surgeon. Another communication of interest appears in the *Presse Médicale* of March 18th from the service of Professor Pierre Marie at the Salpêtrière. Professor Marie gives a full description of an unusual variety of traumatic lesion of the median nerve, in which the symptoms are mainly sensory, the motor symptoms being slight. Instead of holding his hand in the characteristic position of median palsy, the patient keeps his fingers extended, sometimes the terminal phalanges are hyperextended, the thumb is in slight opposition. There is a fine tremor of the three radial fingers, and marked trophic and vaso-motor changes in the median distribution are always observable. The hand is warmer than its fellow, but, above all, it is "*atrocement douloureuse*." The maximum pain is in the pulp of the affected fingers and their nails; whatever be the site of the lesion in the nerve trunk this is the distribution of the pain. Dry heat always aggravates the condition, hence the patients cover their hand in cold, wet dressings, and keep renewing them themselves. So insignificant a stimulus as a cough increases the pain at once, and in three cases it was noted that grasping, with the sound hand, a warm object induced an exacerbation of the pain on the affected side. A yawn, a sneeze, even simple emotions such as seeing a fellow patient slip on a polished floor, a sudden noise, music, looking at a touching or an amusing picture, are all mentioned by Professor Marie as aggravating the neuralgia. Objective sensory changes are confined mainly to the tactile form. There is also a slight wasting of the muscles concerned, but, as already observed, never a pronounced paralysis. The pathological condition is probably one of traumatic ascending neuritis of the nerve, and operative treatment has not, in Professor Marie's experience, been very satisfactory. He makes the interesting observation that the musculo-spiral, ulnar, and median seem to vary somewhat in their reaction to injury; in the case of the musculo-spiral, the chief symptoms are paralysis, and there is little sensory change; in the case of the ulnar, with a traumatic main-en-griffe, there are few, if any, trophic and vaso-motor changes; while with the median the motor defects are secondary and, in some cases at least, pain and vaso-motor phenomena are extremely pronounced.

RUPTURE OF THE EXTENSOR LONGUS POLLICIS.

Dr. J. Ramsay Hunt has recorded in a recent issue of the *Journal of the American Medical Association* a case of a very rare injury—rupture of the tendon of the extensor longus pollicis. The patient was a tailor, aged 31 years, who worked from 10 to 12 hours daily, much of the time sewing with a coarse, heavy needle. He also used an iron for pressing clothes. On Oct. 25th, 1914, after a day's work, he inserted his right hand into his trousers pocket in search of some object, twisting the hand about as one does in trying to explore angles and recesses. He was seized with severe pain over the posterior surface of the wrist on the radial side and over the back of the first metacarpal bone. On removing his hand he could not extend the distal phalanx of the thumb, though he could easily flex it. For several days there was great pain over the dorsal surface of the wrist and first metacarpal bone, and for a fortnight this region was tender and showed some swelling. On examination on Dec. 1st there was paralysis of the extensor longus pollicis. The patient could strongly flex the distal phalanx of the thumb, but had not the least power of extension. In contrast there was fair power to extend the proximal phalanx and first metacarpal bone. When the tendons of the thumb were rendered prominent by strong extension the normal prominence of the extensor longus pollicis was absent. When the finger was drawn along the course of the long extensor there could be felt just below the posterior annular ligament a small movable rounded slightly tender swelling. This corresponded to the distal end of the ruptured tendon. The proximal end was not palpable. Electrical examination failed to elicit any response in the extensor longus pollicis, while all the other muscles reacted normally. The sensibility of the hand was normal. Suture of the tendon was recommended but declined. Normal tendons are so strong that rupture is almost impossible. In the case of severe strains either the muscle tears or the periosteal insertion of the tendon gives way, often carrying a fragment of bone. For a tendon to rupture it must have been previously weakened by disease. While rupture of the extensor longus pollicis is very rare in medical literature generally it has been well known to German military surgeons for a long time. In the medical reports of the Prussian army from 1870 to 1904 von Wurthenau collected 62 cases, all in drummers. The condition is the result of chronic tenosynovitis induced by a peculiar method of holding and using the left drumstick, which causes mechanical irritation of the tendon as it emerges from its compartment in the posterior annular ligament of the wrist. In time changes take place in the tendon and its sheath and eventually rupture occurs, either during a paroxysm of drumming or more rarely spontaneously. It is said that the affection occurs usually in beginners and exclusively on the left side. Microscopic examination of the severed tendons has shown hyaline swelling and necrosis and separation of the tendon fibres. Dr. Hunt thinks that in the case of the tailor there must have been similar changes in the tendon. It is curious that no warning pain seems to have been observed in any of the cases. But though rupture may occur painlessly, more frequently a piercing pain is felt over the back of the wrist, often shooting up the forearm. The tendon may be swollen and tender and the distal portion is often felt below the annular ligament as a tender movable nodule. Isolated instances of the lesion have been recorded in a compositor, a wood-carver, a farmer, and in waiters. As to treatment, if there is no evidence of union after a brief period of fixation, suture should be performed.

THE Croonian lectures will be delivered at the Royal College of Physicians of London on June 17th, 22nd, 24th, and 29th, at 5 P.M., by Surgeon-General Sir David Bruce, C.B., F.R.S., A.M.S. The subject will be Trypanosomes causing Disease in Man and Domestic Animals in Central Africa.

THE Progress of Public Health in Egypt is the subject which Dr. F. M. Sandwith has chosen for his course of four Gresham lectures to be delivered at the Gresham College, Basinghall-street, E.C., on May 18th, 19th, 20th, and 21st, at 6 P.M. The lectures will have a topical bearing.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Colloidal Gold in the Treatment of Infected Wounds.

M. Cunéo and M. Polland have been using colloidal gold in a whole series of infected traumatisms in which the phenomena of infection persisted in spite of the usual surgical measures. The gold was injected intravenously, intramuscularly, or hypodermically in the peripheral zone of the infected region. The clearest and most valuable results have been obtained in large wounds of limbs with infection by anaerobic microbes. In these cases a marked fall of temperature ensues, together with considerable diminution in the number and quality of pulsations and a return towards normal of the arterial pressure. Local modifications may also be observed in the wound; a diminution of the fœtid odour and secretion and attenuation of the œdema. These latter phenomena are even more influenced by local injections of colloidal gold. In penetrating wounds of the abdomen medically treated the authors have used this remedy as a preventive measure. In pyogenous infections the results of injections of colloidal gold have been less clear, perhaps because the authors have been led to employ them more in cases of infection of the serous membranes, where a local reaction sufficient to stop the processes of suppuration was not to be expected. The intravascular injections are followed by violent reaction; a severe rigor may last for 40 minutes. Sometimes the countenance becomes slightly cyanosed, the temperature rises, and the pulse is quickened. An abundant perspiration sets in later and may last sometimes several hours. When given intramuscularly colloidal gold gives rise to no reaction. It may be injected by this route up to 50 c.c. at a single time and several days in succession. Used thus the gold has a mode of action milder but also slower than that by the intravascular route. These injections may be also made by means of a long needle around the limits of the infected tissue, avoiding the vessels so as not to provoke by the entrance of some drops of the liquid directly into the blood the violent reaction of an intravenous injection. Intravenous injection is definitely indicated only where rapid effect is sought. In individuals with lowered tension recourse had better be had, at first at any rate, to the intramuscular route. Injections around the wound are especially indicated when a local action is desired.

Conservative versus *Radical Operations in the Surgery of the Limbs.*

M. Mauclaire has reported to the Société de Chirurgie on the work of Dr. Lapointe, who between Oct. 26th and Feb. 7th was at the front on medical duty, ten miles from the firing line. Here he saw more than 4000 wounded pass through his ambulance, and close on 800 operations were done, nearly all by himself. Out of this number, 547 presented fractures, crushings, and lacerations (*arrachements*) of the limbs. In the upper limb, out of 317 wounded 145 that were not operated on gave 9 deaths; out of 172 operated on, 104 by conservative operations gave 34 deaths, 68 by radical operations 11 deaths, or a total of 54 deaths. In the lower limb, out of 228 wounded, 90 not operated on gave 11 deaths; out of 138 operated on, 75 conservative operations gave 34 deaths, while 63 mutilating operations gave 28 deaths, or a total of 73 deaths. In the upper limb among the radical operations performed there were 68, with 11 deaths, or a mortality of 16 per cent. Three disarticulations of the wrist, 5 amputations of the forearm, 2 disarticulations of the elbow, all primary, had no deaths. Out of 42 amputations of the arm there were 6 deaths, of which 2 out of 33 primary amputations and 4 out of 9 secondary, 16 disarticulations of the shoulder gave 5 deaths, of which 2 out of 12 primary disarticulations and 3 out of 4 secondary disarticulations. Total, 4 deaths out of 55 primary radical operations, and 7 deaths out of 13 secondary. In the lower limb 65 mutilations out of 63 wounded, with 28 deaths, mortality 43 per cent. Three economic operations on the foot gave 3 cures; 21 amputations of the leg gave 5 deaths, of which 3 were in 17 primary and 2 in 4 secondary amputations; 40 amputations of the thigh gave 22 deaths (or 55 per cent.), of which 12 occurred in 25 primary and 10 in 15 secondary amputations. One primary disarticulation of the hip was followed by death. Nearly all the amputations were done by the circular method. For the disarticulation of the shoulder and for some high amputations of the arm and the leg, M. Lapointe employed "racket" amputation. He left the greater part of the stumps uncovered, because most of the wounds at the time of arrival at the ambulance were very seriously infected. For the sterilisation of instruments and gloves M. Lapointe employs sodium borate. The site of operation and the dressings have been treated in the same method up to the day when M. Lapointe was able to procure trioxymethylene and to prepare dry dressings instead. He has used oxygenated water, permanganate of potash, formol solution, 5 per 1000, and tincture of iodine.

Death of Dr. Thoinot.

Dr. Thoinot, professor of legal medicine at the Faculté de Médecine, and a member of the Académie de Médecine, has died very suddenly. In 1906 he succeeded his teacher, Brouardel, in the professorial chair. He was physician to the Hôpital Laennec, and from the beginning of the war médecin principal at the Val-de-Grâce and head of the service of contagious diseases. His writings are of importance, while as an expert he was highly esteemed in the judicial world, and his medico-legal work had gained for him an international reputation.

May 8th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

An Association of "Medical Advisers."

A NUMBER of the "medical advisers" and "certifiers" of the Irish Insurance Commission met in Dublin last week to form an organisation in defence of their interests. Having elected officers and a committee, they passed a resolution declaring their wish to assist in a settlement of the certification question, provided their own interests were safeguarded. It is generally thought that the present system of certification is about to be abandoned.

The Medical Profession and the War.

A committee has been appointed by the medical profession in Belfast (*a*) to make arrangements for looking after the practices of those who may become whole-time medical officers under the R.A.M.C., and (*b*) to form a list of practitioners willing to serve as whole-time officers for a short period.—At a meeting of the board of management of the Benn Ulster Eye, Ear, and Throat Hospital, held in Belfast on May 6th, it was decided to allow Dr. I. A. Davidson and

Dr. W. A. Anderson leave of absence for one year, they having offered their services to the War Office, and to keep their positions open for them. As a result the out-patient department will be open only three days a week.

LUNACY IN EGYPT.

THE FINAL REPORT FOR THE YEAR 1914.

RECENTLY we reviewed the delayed reports of 1912 and 1913[1] dealing with lunacy in Egypt, and now we have the final report of 1914 before us. As in Dr. J. Warnock's previous reports, we get a most complete history of the work carried on. And this has been done under trying conditions, as, owing to the death of Dr. Pearson, deputy superintendent, the administration has been short-handed. There is again complaint made that there is not sufficient accommodation for the patients, so that many have to be discharged before they are really mentally stable; hence relapses are frequent, and criminal acts are done by the unstable convalescents. In the main building at Abbassia the recent and acute cases are received, while at Khanka the more calm and chronic cases are occupied in agriculture. The report is for English readers chiefly interesting from the special causes of insanity, and for the medico-legal aspect of the partly cured patients.

Pellagra is a great cause of insanity; in fact, is given as the chief cause. Of 700 admissions, 132 were suffering from pellagrous insanity, 94 from hashish, and 40 from alcohol. General paralysis provided 41 cases. A very interesting table is the one showing the offences and forms of insanity of the 54 male accused persons, and the forms of insanity of the 21 male convicted prisoners admitted in 1914. Of the 54, 12 were suffering from pellagrous insanity, and 8 from that due to hashish. Of the 75 in whom there was a history of crime, 10 were pellagrous, and 6 of the insane from hashish were convicted of murder or murderous assaults. Every form of crime is represented by the pellagrous insane, but violence is the most common. Thirty-eight deaths were due to pellagra, but others suffering from tuberculosis had pellagra as well.

Nearly 6 per cent. of the male admissions were suffering from general paralysis, and 25 of the 125 deaths of male patients were due to the same disease. There was a slight decrease in the number of patients suffering from hashish insanity. Considering the prejudice against post-mortem examinations, it is interesting to find that 56 were performed. Dysentery was, as usual, represented, but was only responsible for nine deaths.

A pathological laboratory has been started, and as a result a special ward for observation and treatment of ankylostomiasis was opened. One hundred and ten patients were recently examined, and 29 proved to be infected; these were treated with thymol. No patient succeeded in committing suicide. A good many accidents occurred, due to violence in the overcrowded wards.

The report of Dr. H. W. Dudgeon for the Khanka Asylum is brief, but points to the steady development of the subsidiary asylum. It is also the model for a working asylum which is carried out and developing under rather trying conditions.

The Lunacy Department now being a branch of the Ministry of the Interior, and having an official head in Dr. Warnock, time and money alone are required to make the work very satisfactory as well as instructive.

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[1] THE LANCET, Jan. 30th, 1915, p. 243.

SERVICE MEDICAL OFFICERS AND THE INCOME-TAX.

THERE are no doubt many medical men on war service who from one cause or another have not taken up the question of their income-tax for the past year and are not acquainted with their rights in regard to any tax that may have been paid in excess of their true liability. The service medical officer's position in regard to the income-tax is, moreover, of interest to those whose liability, though not affected for the year 1914–15, will be affected for the current year owing to the interference with their general practice. Before dealing with the matter it may be remarked that an officer who is in doubt as to the manner in which the tax that he has paid has been arrived at can obtain full particulars on application to the Surveyor of Taxes in regard to the private practice, and to the Assessor at the War Office or Admiralty in regard to official pay and allowances.

Claims for Adjustment.

The tax charged on pay and allowances is, of course, deducted by the paymaster, but unless the recipient has taken steps to ensure allowance of any relief due to him the tax will have been deducted at the full rate. The importance of taking measures to obtain any adjustment that may be due will be realised from the fact that in the case of earned incomes it is only where the total income from all sources exceeded £2500 that the full rate of 1*s*. 8*d*. for the past year was payable; on smaller incomes there was relief of 8*d*. in the £ where the total income was not more than £1000, 6*d*. where not more than £1500, 4*d*. where not more than £2000, and 1⅓*d*. where not more than £2500. In regard to this type of relief it must be observed that it is now too late to make any claim unless the officer filled in a statement of total income from all sources before Sept. 30th last, either by way of a specific claim to the "earned income" rate or in the ordinary course in making his professional return for the year 1914–15. The possibility to be guarded against is that, while relief has been allowed on the professional assessment, the reduction in the rate has not been extended to the War Office or Admiralty pay. Forms were issued to enable officers to make claims or to declare the address from which they had already claimed, and in cases where these were duly completed there is little likelihood of overcharge under this head; but it is not too late to obtain relief where an officer, having duly made his statement of total income from all sources locally, did not notify the War Office or Admiralty. The original statement will, of course, have proved inaccurate in the light of subsequent events, but it operates as a notification of claim, and an amended statement may now be put in for the purpose of obtaining repayment of any overcharge.

In this connexion there arises the question of the amount to be regarded as income from the practice for the year 1914–15 by those who for part of the year were engaged on war service. This matter was dealt with by the second Finance Act of last year. The assessment on the profits of the practice was originally made on a figure intended to represent the average profits of the three preceding years, but a special provision enacts that where a person has been serving as a member of the military or naval forces, or in any work abroad of the British Red Cross Society, St. John Ambulance Association, or any other body with similar objects, the assessment shall be reduced to the amount of the actual profits of the year and repayment of duty made where necessary. To secure this adjustment it will be necessary to submit to the Surveyor of Taxes an account of the receipts and expenses of the practice for the year 1914–15, prepared on the lines indicated in THE LANCET of April 24th, p. 878, and from that official may also be obtained the form necessary for any other repayment that may be due. In cases where the practitioner usually makes up his accounts to Dec. 31st and not to March 31st, it will be well to make an adjustment in order that full effect may be given to any falling off of receipts after Dec. 31st. This may be done by substituting the receipts in the first quarter of 1915 for those in the first quarter of 1914, and adding to the expenses of the year 1914 a sum representing the extra expense incurred by the employment of a locum-tenent for the first quarter of 1915. If it be not convenient to an officer to go fully into the matter at the moment, he should write to the surveyor notifying his desire for any adjustment that may be due to him, to be claimed when circumstances permit. There will be many cases in which the profits of the practice for the year, with the addition of the pay, have amounted to a sum so much less than the figure originally returned for assessment, that the total income from all sources, then shown as over one of the "earned income" limits, say £1000, has fallen below that limit, with the result that a new rate of duty will apply.

In determining the amount to be regarded as income from army pay, it is not necessary to take into account the field allowances, ration money, or servants' allowances; these seem to be regarded as not subject to income-tax, presumably on the ground that they are intended to defray expenses occasioned purely by the exigencies of military life. No corresponding relief appears, however, to be allowed when a uniform rate of pay is fixed to cover such allowances. It will usually be found the most convenient course to inquire of the assessor precisely what amount has been treated as subject to income-tax for the year ended April 5th, 1915, as suggested above.

Other Forms of Relief.

There are other descriptions of relief in respect of which repayment may be claimed by those to whom they have not already been allowed—that is to say, the allowance for life assurance premiums, the abatements of £160, £150, £120, and £70 on total incomes not exceeding £400, £500, £600, and £700, the deduction of £20 for each child under 16 years of age on April 6th, 1914, allowed where the total income does not exceed £500, and the "small incomes" relief, amounting for the past year to 4*d.* in the £ on incomes not exceeding £300 and $1\frac{1}{3}$*d.* in the £ on incomes not exceeding £500. The last-mentioned form of relief does not apply to income on which the "earned income" rate has been charged. In all these cases it is possible to claim repayment at any time within the next three years, but the preparation of the claim will involve the least trouble now, when the necessary figures and papers are readily available. The time-limit of three years does not apply to applications for adjustment on account of a falling-off of professional profits or non-allowance of the "earned income" rate on pay and allowances; applications of this nature should be made without delay.

The total income for income-tax purposes of a medical man who has been engaged on war service during the past year is computable as follows: the amount of the profits of his practice (or civil salary, if holding an appointment) for the year to April 5th (or March 31st) *plus* his military or naval pay and those allowances that are treated as subject to income-tax, *plus* the amount of any other taxed income that he or his wife may have. If this total fall below one of the limits referred to in this article a title has arisen to one or more of the forms of relief indicated.

MEDICINE AND THE LAW.

Dr. F. J. Waldo's Annual Report.

THE return made annually to the Common Council by the coroner for the City of London and borough of Southwark has been issued for 1914, and contains, as usual, interesting notes and suggestions upon topics arising out of inquests held by Dr. F. J. Waldo. Some of these relate to cases which have attracted public attention and might be in danger of being forgotten if the attention of a body such as the Common Council were not officially recalled to them, with the possibility that useful results may some day ensue. An example is to be found in the death of a newspaper seller outside Broad-street railway station, who was shot by a man recently released from a private lunatic asylum. The patient had been allowed to go on the condition that relatives took charge of him, and this they had failed to do, with the result that without any difficulty he bought a gun licence, a revolver, and cartridges, which he fired in the street with the fatal result mentioned. In another pistol case recorded by Dr. Waldo the deadly weapon had been bought by a boy without any need to comply with the formal provisions of the Pistols Act, 1903, because its barrel was more than 9 inches in length. The effect of this dangerous proviso in creating a trade in weapons quite as deadly as many of the shorter pistols is well known. An interesting case referred to in Dr. Waldo's report, but not one of the kind which attracts popular attention in reports of inquests, is that of a butcher named Tarrant, manager of a meat store at Mitcham, who died from cutaneous anthrax in Guy's Hospital. At the inquest it came out that a horse and a slaughterman had also died from anthrax, and that two other butchers and a clerk were suffering from it, all cases being most probably connected. The horse belonged to a wharf company and was kept in stables adjoining a slaughter-house, from which meat had been brought to the butcher's establishment at Mitcham by horses which also belonged to the wharf company. This meat was handled by Tarrant. A slaughterman in the Croydon slaughter-house had died from anthrax in Croydon General Hospital without any notification of his death reaching the Croydon coroner. The third butcher referred to was the son of Tarrant's employer, and had handled the contagious swelling on his neck, and the fourth was in the same employment but at Croydon, where he obtained meat from the same slaughter-house. A rider to the verdict at this inquest suggested that anthrax should be made compulsorily notifiable to the medical officer of health of the district in which it occurs, and that all deaths from it should be reported to the coroner. This no doubt is one of the subjects which should be remembered whenever legislation resumes its natural course, and when time permits of the amendment and codification of the law relating to the registration of deaths and to the duties of coroners.

Stevens v. *British Medical Association.*

The Court of Appeal recently heard and dismissed an application for judgment or a new trial made by the unsuccessful plaintiff in the action of Stevens *v.* The British Medical Association. The action, it will be remembered, was based upon criticism of a destructive character directed against "Stevens's Consumption Cure" and republished from the *British Medical Journal* in "Secret Remedies: What They Cost and What They Contain." Specific questions were left to the jury at the trial before Mr. Justice Shearman, and upon them judgment was given for the defendants. The Court of Appeal now delivered judgment without calling upon counsel for the British Medical Association to argue, Lord Justice Swinfen Eady saying that the question was whether upon the facts truly stated the comment was fair and such as could reasonably be made. The jury had had all the facts laid before them and their answers amounted to this, that the words complained of were not libellous because they were fair comment. In his opinion the allegation that the verdict was against the weight of evidence could not be supported, and there had been no misdirection. In his lordship's opinion the trial had been very fairly conducted. In an earlier portion of his judgment Lord Justice Swinfen Eady said that it had been already decided that words containing personal imputations upon the plaintiff might be in law "fair comment." The British Medical Association and our contemporary are to be congratulated upon a judgment which brings to a satisfactory ending the difficult and dangerous litigation involved in cases of this kind.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Fleet Surgeon (retired) W. Hackett to Devonport Dockyard.

The undermentioned have been entered as Surgeons for temporary service in His Majesty's Fleet:—Alfred Beuthin Danby and Guy Walker Woodhouse (dated May 4th).

The following appointments have been notified:—Temporary Surgeons: H. L. P. Peregrine and S. W. Toulmin to the *Victory*, additional, for Haslar Hospital; F. A. V. Denning to the *Victory*, additional; J. A. Watson to the *President*, additional, for Eastbourne Aerodrome; A. B. Danby to the *Vivid*, additional, for Plymouth Hospital; G. W. Woodhouse to the *Pembroke*, additional, for Chatham Hospital; G. W. Pool and J. C. Gillies both to the *Victory*, additional, for Haslar Hospital; C. H. Browne to the *President*, additional; W. B. Cunningham, to the *Actæon;* R. S. Lawson to the hospital ship *Plassy;* and G. M. Fraser to the *Zealandia*.

ARMY MEDICAL SERVICE.

Temporary Major Cuthbert S. Wallace, from Royal Army Medical Corps, to be Colonel (dated April 29th).

ROYAL ARMY MEDICAL CORPS.

William George Kynaston Barnes, late Deputy-Surgeon-General, Royal Navy, to be temporary Major (dated April 16th).

Stafford Mouritz Cox to be temporary Major (dated April 19th).

The undermentioned are granted temporary rank as follows whilst serving with the War Hospitals named :—Dated April 21st: Napsbury War Hospital: Lancelot William Rolleston to be Major; Arthur O'Neill to be Captain. Springfield War Hospital: Reginald Worth to be Major; Gayton Warwick Smith to be Captain.

The undermentioned to be temporary Captains: Dated April 7th: John Davidson Duncan, late Captain, 5th Battalion, The Black Watch (Royal Highlanders), Territorial Force. Dated April 17th: George Herbert Ward-Humphreys, late Surgeon-Captain, 1st Gloucestershire Engineers, Territorial Force. Dated April 18th: Matthew Leslie Guy Hallwright. Dated April 19th: Harry Young Cameron Taylor, Charles Coley Choyce. Dated May 12th: Temporary Lieutenant Edward A. Evans, Temporary Lieutenant James A. Torrens.

The undermentioned to be temporary Lieutenants: Dated April 9th: Alexander Hugh Dickson Smith. Dated April 12th: Michael Thomas MacMahon and Captain Charles Francis White, 6th Battalion, The Cheshire Regiment. Dated April 14th: Neil Campbell, Lorne Benjamin Graham, Percy Herbert Delamere, Arthur Lincoln Thornley, Arthur Henry Priestley, James Robert Robertson, John Hay Moir, Arthur Thomson, Arthur William Hare, Alexander Mitchell Cowie, Reginald Newton Weekes, Lindsey Willett Batten, Charles Harold Walker McCullagh, Alfred Douglas Bigland, Cyril Meredith Willmott, Alexander Fisher, Joseph McGowan, and Edward Mapother. Dated April 15th: George Harold Wood, Philip Northcote Vellacott, Norman Stephen Gilchrist, Guy Budd Courtney, Frederick John Blackley, Charles Herdman Newton, Robert McCorran Service, John Porter, Frederick James Pierce, Robert John Merson, Frederick William Smith Stone, John Eills Gething, William Alexander Gordon Russell, Langford George Davies, James Hinton Robertson, Thomas Steven McIntosh, Robert Barsham Debenham, and John Caruthers Sale. Dated April 16th: John Scott. Dated April 17th: Theodore Francis Dillon, Herbert Mather Spoor, Herbert Frederick Nolan, Walter Halli Burton MacDonald, Hugh Hamilton Moffat, Alexander Waugh, Edwin Fryer, George Hellyard Darlington, Frederick George Thompson, Frank Graham Wrigley, James Hay Marshall, Arthur Leonard Weakley, Victor Jenner Batteson, and Guy Stuart Goodwin. Dated April 19th: John Rowat, Evan Lewis Hickey, James Jenkins Robb, Alphonsus McGrath, William Claude Percy Barrett, Arthur Macgregor Warwick, Bertram Ernest Wright, Crawford Smith Crichton, Thomas Leathard Wormald, William George Hopkins, Francis Charlesworth, George Stanley Applegate, Robert Macnair Walker, Arthur Herbert Butcher, Arthur Edward Druitt, Herbert Arthur Hancock, Michael Joseph Petty, Richard Kenefick, George Robertson Lipp, John William Nelson Roberts, Tom Stansfield, and Wilberforce John James Arnold. Dated April 20th: William Carnes, Gerald William Stone, Riccardo Stephens, James Clarkson Waithman, George Basil Price, and William Robert Etches. Dated April 21st: Geoffrey Ward Thompson, Henry Carter Thorp, William Arthur Shann, Cunison Charles Finlater, Ralph Paul Williams, William Peach Taylor, Norman Grellier, Hugh Stevenson Davidson, Tom Entwisle Ferguson, John Forbes, David Johnston, and James Charles Martin.

James Erlank is granted temporarily the honorary rank of Lieutenant whilst serving with the Duchess of Westminster's War Hospital (dated May 6th).

Lieutenant Reginald P. Cockin relinquishes his temporary commission (dated April 23rd). Lieutenant Charles B. Pearson, having ceased to serve with the British Red Cross Hospital, relinquishes his temporary commission (dated May 7th).

The undermentioned temporary and honorary Lieutenants are granted the temporary and honorary rank of Captain :—Dated May 7th: Lionel Edward Close Norbury, James Forbes Mackay, and James Duncan Lyle.

INDIAN MEDICAL SERVICE.

Major R. A. Lloyd relinquishes the temporary rank of Lieutenant-Colonel (dated April 15th, 1915).

SPECIAL RESERVE OF OFFICERS.

Major Charles Roberts, having ceased to perform duty with No. 18 Field Ambulance, resigns his commission. Captain Wilson Harold Percy Hey, 2nd Western General Hospital, Royal Army Medical Corps, Territorial Force, to be Captain.

The undermentioned Lieutenants to be Captains: William F. McLean, Robert M. Beath, Thomas Walker, William St. L. Dowse, William McN. Walker, William McK. H. McCullagh, Harry D. Rollinson, and Samuel R. Armstrong.

The undermentioned Lieutenants are confirmed in their rank: William T. Hare, John D. MacCormack, Henry R. Sheppard, and Donald C. Macdonald.

Supplementary to Regular Units or Corps: R.A.M.C.—Lieutenant James T. Cameron resigns his commission.

The undermentioned ex-Cadets of the Officers Training Corps to be Lieutenants (on probation): James Lawson, Norman Bell Graham, Arthur Eaton Richmond, and Geoffrey Bede Egerton. To be Lieutenants (on probation): Patrick Alexander Clements, Robert Orr Colquhoun Thomson, and William Murdoch.

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd East Anglian Field Ambulance: Captain James Turtle to be temporary Major.

2nd East Lancashire Field Ambulance: Graham Stevenson to be Lieutenant.

1st Lowland Field Ambulance: Captain John W. Leitch to be temporary Major.

2nd Northumbrian Field Ambulance: Cecil Dermot Rogers to be Lieutenant.

3rd Northumbrian Field Ambulance: Robert Raffle and John Steedman Horn to be Lieutenants.

3rd Northern General Hospital: To be Lieutenants: Balfour McKean and Robert Pringle Anderson.

3rd Southern General Hospital: William Stobie to be Lieutenant.

Sanitary Service: Arthur Hamilton Lowe to be Captain, whose services will be available on mobilisation.

Highland Casualty Clearing Station: To be Lieutenants: Joseph Ellis Milne, Charles Forbes, and Alexander Jaffrey Presslie.

5th Northern General Hospital: Lieutenant-Colonel George C. Franklin relinquishes his commission.

Eastern Mounted Brigade Field Ambulance: Vernon Montague Wallis to be Lieutenant.

1st Home Counties Field Ambulance: William Thomas Henderson to be Lieutenant.

1st Southern General Hospital: The undermentioned to be Captains, whose services will be available on mobilisation: George Percival Mills, Andrew Russell Bearn, and Arthur Augustus Russell Green. To be Lieutenant: William Albert Stokes.

2nd London Sanitary Company: To be Lieutenants: Edwin Josiah Messent, Arthur George Whitfeild, and Owen Herbert Peters.

East Anglian Casualty Clearing Station: James Mowat (late Fleet-Surgeon, Royal Navy) to be Major (temporary). To be Lieutenants: Robert Charles Standring Smith and William Joseph Deighan.

Lowland Mounted Brigade Field Ambulance: To be Lieutenants: John Richmond Herbertson, Stuart Spence Meighan, and Thomas Cameron Houston.

4th Northern General Hospital: Christopher Wilfred Sharpley to be Lieutenant.

4th Southern General Hospital: Robert Jaques to be Captain, whose services will be available on mobilisation.

Lowland Casualty Clearing Station: Major John McKie, from the 2nd Lowland Field Ambulance, to be Lieutenant-Colonel.

Northumbrian Casualty Clearing Station: Captain William Simpson, from the 1st Northumbrian Field Ambulance, to be Captain.

Highland Mounted Brigade Field Ambulance: Captain John W. Mackenzie to be temporary Major. Lieutenant Lachlan M. V. Mitchell and Lieutenant Alexander F. Lee to be temporary Captains.

Welsh Border Mounted Brigade Field Ambulance: Lieutenant Walter S. Snell resigns his commission.

Attached to Units other than Medical Units.—Lieutenant Isaac B. Bernstein resigns his commission. Lieutenant Percival T. Rutherford to be Captain. To be Lieutenants: Thomas Dobson Bell, Thomas Porter, Edmund Henri Gonin, and Edward Peter Dawes.

PROMOTION IN THE MEDICAL CORPS OF THE UNITED STATES NAVY.

The United States is considering a Bill to increase the efficiency of the personnel of the navy, and its proposals regarding the Naval Medical Corps, even if complicated, are interesting to the officers concerned and should give hope to the juniors. Medical officers are in future to be commissioned as surgeons with the rank of lieutenant (junior grade) for three years, lieutenant for nine years, and lieutenant-commander for ten years. Officers with less than 22 years' service are promoted to the higher ranks by seniority if there are vacancies for them. But if there are no vacancies, and officers of over 22 years' seniority accumulate at the top of the list and the seniority of the senior 12 averages 22 years a special system for promotion is employed. For each of these 12 a figure of merit is to be calculated, marks being assigned to each for "professional record, knowledge, and reputation," and those with the highest figures shall be promoted into the available vacancies (six, it is expected) according to seniority, the others being retired. The President, in order to make vacancies, may retire officers from each of the two highest ranks, but not more than three from each in any one year. And thus medical officers in the United States navy will get on to the administrative ranks four years or so earlier than do our medical officers, which should make the service there more efficient and the officers on the active list younger and more contented.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8776 births and 5383 deaths were registered during the week ended Saturday, May 8th. The annual rate of mortality in these towns, which had decreased from 19·9 to 17·3 per 1000 in the four preceding weeks, further fell in the week under notice to 15·5 per 1000 of their aggregate population, estimated at 18,134,239 persons at the middle of last year. During the first five weeks of the current quarter the mean annual death-rate in these towns averaged 17·8, against 18·8 per 1000 in London. Among the several towns the death-rate last week ranged from 6·1 in Lincoln, 7·7 in Enfield, 8·1 in Southend-on-Sea, 8·2 in Hornsey and in Smethwick, and 8·7 in Wimbledon to 23·7 in Barrow-in-Furness, 23·8 in Walsall, 24·3 in West Hartlepool, 24·5 in Wigan, and 25·2 in Middlesbrough.

The 5383 deaths from all causes were 639 fewer than in the previous week, and included 557 which were referred to the principal epidemic diseases, against 689 and 711 in the two preceding weeks. Of these 557 deaths, 276 resulted from measles, 121 from whooping-cough, 67 from infantile diarrhœal diseases, 51 from diphtheria, 30 from scarlet fever, and 12 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·6, or 0·4 per 1000 less than in the previous week. The deaths attributed to measles, which had been 426, 389, and 392 in the three preceding weeks, fell to 276 last week, and caused the highest annual death-rates of 2·4 in Salford, 2·8 in Sheffield, 3·1 in Tottenham and in St. Helens, 3·5 in Darlington, 4·0 in Northampton and in West Hartlepool, 4·4 in Walsall, 4·5 in Middlesbrough, and 6·3 in Barrow-in-Furness. The deaths referred to whooping-cough, which had declined from 167 to 142 in the four preceding weeks, further fell to 121 last week; the highest death-rates recorded from this cause were 1·2 in Willesden and in Walthamstow, 1·4 in South Shields, 1·7 in Reading, 2·0 in Swindon and in Aberdare, and 3·4 in Wigan. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 63, 65, and 73 in the three preceding weeks, fell to 67 last week, and included 17 in London, 7 in Liverpool, 5 each in Birmingham and Sheffield, and 4 in Salford The deaths attributed to diphtheria, which had been 55, 49, and 56 in the three preceding weeks, declined to 51 last week, of which 9 occurred in London and 3 in Great Yarmouth. The deaths referred to scarlet fever, which had increased from 16 to 34 in the five preceding weeks, fell to 30 last week, and included 5 in London, 3 each in Liverpool, Middlesbrough, and Newcastle-on-Tyne, and 2 each in Birmingham and Leeds. The fatal cases of enteric fever, which had been 11, 8, and 12 in the three preceding weeks, were again 12 last week, and included 6 in London.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2422, 2369, and 2377 at the end of the three preceding weeks, had increased to 2384 on Saturday last; 307 new cases were admitted during the week, against 263, 259, and 316 in the three preceding weeks. These hospitals also contained on Saturday last 1214 cases of diphtheria, 220 of measles, 63 of enteric fever, and 14 of whooping-cough, but not one of small-pox. The 1384 deaths from all causes in London were 187 fewer than in the previous week, and corresponded to an annual death-rate of 16·0 per 1000. The deaths referred to diseases of the respiratory system, which had been 469, 392, and 346 in the three preceding weeks, further declined to 289 in the week under notice, but were 68 in excess of the number in the corresponding week of last year. The deaths from influenza numbered 20, against 39, 27, and 30 in the three preceding weeks.

Of the 5383 deaths from all causes in the 96 towns 211 resulted from different forms of violence and 398 were the subject of coroners' inquests, while 1567 occurred in public institutions. The causes of 32, or 0·6 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Leeds, Bristol, West Ham, Bradford, Hull, and in 74 other smaller towns. Of the 32 uncertified causes of death, 9 were registered in Birmingham, 4 in Liverpool, and 2 each in St. Helens, Southport, Warrington, Sunderland, and South Shields.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,345,500 persons at the middle of this year, 1231 births and 815 deaths were registered during the week ended Saturday, May 8th. The annual rate of mortality in these towns, which had been 20·9, 18·5, and 20·2 per 1000 in the three preceding weeks, declined to 18·1 per 1000 in the week under notice. During the first five weeks of the current quarter the mean annual death-rate in these towns averaged 19·7, against a corresponding rate of 17·8 per 1000 in the large English towns. Among the several towns the death-rate last week ranged from 10·2 in Kirkcaldy, 11·7 in Leith, and 11·8 in Coatbridge, to 20·3 in Edinburgh, 20·6 in Perth, and 24·0 in Greenock.

The 815 deaths from all causes were 94 fewer than in the previous week, and included 142 which were referred to the principal epidemic diseases, against 128 and 150 in the two preceding weeks. Of these 142 deaths, 65 resulted from whooping-cough, 47 from measles, 15 from infantile diarrhœal diseases, 7 each from scarlet fever and diphtheria, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 3·2, against a corresponding rate of 1·6 per 1000 in the large English towns. The deaths attributed to whooping-cough, which had been 90, 75, and 82 in the three preceding weeks, declined to 65 last week, and included 34 in Glasgow, 10 in Edinburgh, 9 in Dundee, and 3 in Greenock. The deaths referred to measles, which had been 19, 26, and 36 in the three preceding weeks, further rose to 47 last week, of which 35 were registered in Glasgow, 7 in Aberdeen, and 2 in Clydebank. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 10, 12, and 9 in the three preceding weeks, rose to 15 last week, and included 6 in Glasgow and 2 each in Aberdeen and Leith. The deaths attributed to scarlet fever, which had been 7, 7, and 11 in the three preceding weeks, fell to 7 last week, and comprised 3 in Glasgow, and 2 each in Aberdeen and Paisley. The deaths referred to diphtheria, which had been 7, 6, and 12 in the three preceding weeks, fell to 7 last week, and included 2 each in Glasgow, Paisley, and Motherwell. The fatal case of enteric fever occurred in Edinburgh.

The deaths referred to diseases of the respiratory organs, which had been 178, 145, and 153 in the three preceding weeks, declined to 118 in the week under notice, but were 2 in excess of the number in the corresponding week of last year. The deaths attributed to violence numbered 23, against 30 and 25 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,212,380 persons at the middle of this year, 592 births and 463 deaths were registered during the week ended Saturday, May 8th. The annual rate of mortality in these towns, which had been 22·1, 22·4, and 19·1 per 1000 in the three preceding weeks, rose to 19·9 per 1000 in the week under notice. During the first five weeks of the current quarter the mean annual death-rate in these towns averaged 21·5, against corresponding rates of 17·8 and 19·7 per 1000 in the English and Scotch towns respectively. The death-rate last week was equal to 23·7 in Dublin (against 16·0 in London and 18·4 in Glasgow), 16·7 in Belfast, 20·4 in Cork, 15·2 in Londonderry, 23·0 in Limerick, and 13·3 in Waterford, while in the 21 smaller towns the mean death-rate was 19·7 per 1000.

The 463 deaths from all causes were 19 in excess of the number in the previous week, and included 33 which were referred to the principal epidemic diseases, against 41 and 35 in the two preceding weeks. Of these 33 deaths, 10 resulted from measles, 9 each from whooping-cough and infantile diarrhœal diseases, 3 from diphtheria, and 1 each from enteric fever and scarlet fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·4, against corresponding rates of 1·6 and 3·2 per 1000 in the English and Scotch towns respectively. The deaths attributed to measles, which had been 5, 13, and 11 in the three preceding weeks, were 10 last week, of which 8 occurred in Belfast. The deaths referred to whooping-cough, which had been 11, 20, and 9 in the three preceding weeks, were again 9 last week, and included 5 in Dublin and 2 in Belfast. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had increased from 3 to 10 in the four preceding weeks, were 9 last week, and comprised 6 in Dublin, 2 in Belfast, and 1 in Londonderry. The 3 deaths from diphtheria occurred in Dublin, and were slightly in excess of the average in recent weeks. The fatal case of enteric fever was registered in Dublin and that of scarlet fever in Waterford.

The deaths referred to diseases of the respiratory system, which had declined from 158 to 84 in the four preceding weeks, further fell to 76 in the week under notice. Of the 463 deaths from all causes, 137, or 30 per cent., occurred in public institutions, and 6 resulted from various forms of violence. The causes of 15, or 3·2 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the large English towns the proportion of uncertified causes did not exceed 0·6 per cent.

Correspondence.

"Audi alteram partem."

SANITATION IN INDIA.

To the Editor of THE LANCET.

SIR,—In your issue of March 6th a joint letter from Professor R. Tanner Hewlett, Colonel W. G. King, and Professor W. J. Simpson was published under the above heading. The responsible positions that these three gentlemen occupy in educational sanitary circles in London secure every consideration for contributions from their pen, and I am authorised to say that the Government of India are in entire agreement with the views set forth in the joint letter in question as regards the value of British Diplomas in Public Health. Indeed, in the resolution to which the writers refer it is clearly laid down that a British Diploma in Public Health is a *sine quâ non* for appointment either as a Deputy Sanitary Commissioner, or, for the present at least, as a first-class health officer. The Government of India, too, fully concur in the view that it is distinctly desirable that Indian candidates for important sanitary appointments should regard training in Great Britain as the foundation of their careers. In this connexion I may state that since 1912, 27 Indians holding British Diplomas in Public Health have been appointed to the Sanitary Department—11 as Deputy Sanitary Commissioners and 16 as first-class health officers. In these circumstances it is scarcely fair to hold the Government of India responsible for the private opinions of a Provincial Sanitary Commissioner, especially when it is borne in mind that the only evidence as to the existence of such opinions is that furnished by the unsupported statements of a disappointed candidate.

I am, Sir, yours faithfully,
P. LUKIS, M.D., F.R.C.S. (Surgeon-General),
Director-General, Indian Medical Service.
Simla, April 15th, 1915.

CEREBRO-SPINAL MENINGITIS: MENINGOCOCCI FOUND IN PERIPHERAL BLOOD FILMS.

To the Editor of THE LANCET.

SIR,—At the end of a short article under the above title in THE LANCET of April 10th I asked the question, "Are the organisms to be commonly found in films made from the peripheral blood in cases of cerebro-spinal fever, and is this a practical method of diagnosis, or are the meningococci only to be found in the septicæmic type of the disease?"

In view of the frequent inquiries I receive from various correspondents, I think it would save some confusion if I now tried to answer that question. 1. Sir William Osler kindly wrote: "I was very much interested in the figures in your paper in to-day's LANCET, as the first demonstration of the meningococci in the blood was made in my wards. We never had a case with so many in the leucocytes, as shown in your Figures 4, 5, and 6. On several occasions we got the cultures when it was difficult to find the organisms by simple staining." 2. Dr. Mary Williams, judging from her letters in the *British Medical Journal* of April 3rd and THE LANCET of April 17th, seems to have been exceptionally fortunate. She says: "I found the germ in 80 consecutive cases, and found it more readily in this manner than from the throat. ...... If there were any symptoms showing involvement of the nervous system, we found the germ in the blood. ...... We had cases of every degree of severity—from a man who started with agonising pain in the head and was dead in a few hours to cases in which diarrhœa, giddiness, and malaise of a slight degree were the only symptoms. ...... In many cases the latter (meningococci) were in the leucocytes. ...... In blood the meningococci I have seen often have a capsule. ...... Personally I believe this to be the method of diagnosis which will shortly be widely adopted." 3. I have heard from two or three bacteriologists, who all state they have entirely failed to find the organisms in the blood of any of the cases they have examined. 4. Thanks to Dr. A. D. Edwards, medical officer of health of Bournemouth, I have had an opportunity of examining films made from ear or finger blood of six undoubted cases of cerebro-spinal fever. One of these was a fulminating, rapidly fatal one. After a prolonged and careful search of these films I have been quite unable to recognise any meningococci, either free or intracellular in position, in any of these. The only case in which I found the organism is the one described and that was an intensely septicæmic type. The patient had "a purpuric rash on the brow and face," and later on extravasation of blood on the trunk. I should think that meningococci could have been found in the blood taken from any part of the body, but what I did notice casually at the time was that when I pricked the lobe of the left ear it felt firm, and somewhat indurated, and it might even have been the seat of the purpuric rash, or even an area in which there was extravasation of blood, but the ward was somewhat dimly lighted and I did not observe this. However, it occurred to me afterwards that it would be a good plan to make the film from the blood taken from a spot of the rash. I therefore wrote to Dr. Edwards: "Please do not trouble to send me any more films from cases of cerebro-spinal fever, unless you happen to meet with another of the septicæmic type. It might, in future, be worth while taking the blood from a spot should the rash be present, just as is done in making cultures from the blood of the rose-coloured spots in the case of typhoid fever."

I think we may, therefore, conclude: 1. That meningococci may be occasionally found in the peripheral blood, but only in rare cases. 2. That this method of examination cannot be used as a means of diagnosis. 3. That Dr. Mary Williams's remarkably successful results have not been obtained by other observers during the present epidemic.

I am, Sir, yours faithfully,
Bournemouth, May 6th, 1915. ALFRED C. COLES.

THE BALNEOLOGICAL COMMITTEE OF THE ROYAL SOCIETY OF MEDICINE AND ITS METHODS.

To the Editor of THE LANCET.

SIR,—Early in February of this year I received a letter from the secretaries of the above recently formed committee—Dr. R. Fortescue Fox and Dr. J. Campbell McClure—intimating the formation of the committee, on the suggestion of the War Office, to collect information and give advice to the War Office regarding "the scientific distribution of wounded soldiers among the British health resorts." In accordance with the request made I furnished a preliminary report on the nature of the establishment of which I am the medical superintendent, and an account of the facilities as regards baths and physiotherapy available. On Feb. 22nd I received a further letter intimating that the following resolution had been just passed at a meeting of the committee:—

> That no bathing establishment should be placed on the list of the War Office which does not allow medical men other than the resident physician to send their patients freely for treatment.

I was asked to state definitely the practice of the hydro in this respect without delay. I did so, and intimated that I was medical superintendent of the hydro and took charge of all details with regard to the treatment of invalids, and informed them that the lay manager of the hotel—albeit a very competent and energetic gentleman—took no charge whatever of the baths or treatment arrangements. As regards patients from outside doctors, I intimated that nine-tenths of my patients were sent me through the kindness of "outside men" in all parts of the country, as well as from Peebles (town and county). These gentlemen invariably left me to deal with the patients according to my own discretion, making some suggestion perhaps occasionally by 'phone message or letter. In short, I intimated what seemed almost superfluous, that I actually discharged the duties of a medical superintendent. I also stated that I would be glad to hear that the committee had no intention of starting a boycott—which under the circumstances I considered most uncalled for—as I had expressed complete willingness to place the establishment, so far as my directors would permit and was humanly possible, at the disposal of wounded soldiers and officers, and to treat the former, at any rate, gratuitously.

I begged for an early reply, but received none whatever until, on my again writing about March 24th to Dr. Fox, personally, expressing rather pointed criticism of the methods on which the whole business was being conducted, I got a personal reply from Dr. Fox. This began as follows: "By this time you would have received Dr. McClure's letter, and understand the real position. He will write you further ...... "; with some other remarks which I need not repeat. As Dr. Fox had placed a late postage extra $\frac{1}{2}d.$ stamp on his note he evidently considered the matter urgent, so I wired at once that I had received no letter, first or second, from Dr. Campbell McClure. I confirmed the wire by letter, and received no response whatever from either secretary. I waited a week and then wrote stating exactly where we stood, and requested the further letter from Dr. McClure promised. On April 1st I received one as follows signed by Dr. Fox: "On receipt of your letter of 24th my colleagues and I were regretfully obliged to conclude that the establishment of medical baths at Peebles was not of such a nature as described in the resolution of which I sent you a copy on Feb. 22nd." I replied, expressing regret at the very ill-considered action of the committee, and have since been in communication with the War Office direct.

Now, Sir, I would like to point out one or two further facts having a bearing on this matter. Last summer Dr. Fox visited this establishment and had a long interview with me, and at that date expressed a desire that it should be "thrown open" so that any medical man could come and prescribe baths or physical treatment for his or her patients, and generally take a hand in "running the show." I do sincerely hope I am not unusually selfish, but as I happen to be physician-in-charge and have a monopoly of the practice—which is really what the Americans call "referred" practice—I did not then happen to see Dr. Fox's point of view as regards private patients. The hotel company might have something to say also if I turned the place inside out and broke my contract with them. Dr. Fox's idea, first promulgated to me last August, now turns up again from the Balneological Committee, dated from 36, Devonshire-place—Dr. Fox's house.

In his letter of March 22nd Dr. Fox tells me "all the considerable bathing establishments have opened their doors in this emergency." I have investigated this matter, and two days ago received a letter from the physician in charge of the largest establishment of its kind in the country, possessing very elaborate and extensive baths which cost upwards of £20,000, and my friend informs me that, quite apart from "opening their doors" in the manner described, they had never even been communicated with, but in any case they were packed with visitors, very largely patients. I find difficulty in reconciling the two statements.

Some years ago you gave me the courtesy of your columns (August 12th, 1911) for a short article on Institutional Hydropathic Treatment and Spa Treatment, in which I endeavoured to show there was a special field for each. I have personally been only engaged in the former branch of hydrotherapeutic practice, but it has always struck me that the spa physician has not only adopted, for the most part, an attitude almost contemptuous to such men as myself, but further in regard to institution work he is largely "without understanding." He appears to be incapable of absorbing the idea that such an establishment might be run by a medical man much after the manner of a tuberculosis sanatorium—or a private asylum—with, of course, lay assistance, in various ways.

Dr. F. A. de Thierry Mouillot, a past president of the Balneological Society, judging from a recent article in the *British Medical Journal*, would seem to be waking up to the possibility. But past experience of spa physicians would lead me to conclude that men engaged like myself in institution treatment are by them regarded as "very small beer." Possibly on the ground that Dr. Mouillot refers to—viz., that the institution is run in large measure for the profit of lay shareholders, and also advertises itself in the medical journals at times. But might I remind Dr. Mouillot and Dr. Fox and other spa physicians that while they themselves do not have such advertisements the baths committee of this or that municipality sometimes advertises its "Queen of watering places" profusely in railway stations and by posters, while the spa physician reaps the benefit.

Now Dr. Fortescue Fox, a quondam spa physician, wishes to coerce me, to run the medical side of this establishment on *his* lines or suffer *military* boycott at any rate. I cannot meet his views. Several hundred "Tommies" have had baths of sorts each week here since early March at a charge of one halfpenny for a towel! This has led to much overtime and Sunday labour for the staff, but the men, now gone, were very appreciative, as were their officers.

I hope, in spite of the Balneological Committee, to have many opportunities of doing "my bit" during the coming year, but I cannot face the inevitable confusion and upset which the carrying out of the wishes of Dr. Fox and his colleagues would cause in a place of this kind—among the bath attendants and the ordinary *clientèle*. I am, Sir, yours faithfully,

THOMAS D. LUKE, M.D. R.U.I.

The Hydro Hotel, Peebles, May 1st, 1915.

THE TREATMENT OF CORNS.

To the Editor of THE LANCET.

SIR,—Measures for the treatment of this often extremely painful affection must be divided into two groups: (1) those which get rid of the corns and (2) those which prevent their recurrence. The ordinary treatment for a painful corn is to cut it down as much as possible, without causing bleeding, either straight away or after a preliminary soaking with hot water or some chemical, and then for a few days apply a protective dressing, such as a corn-plaster or lint and strapping, until the pain and tenderness have gone out of it. The patient then resumes his ordinary vocation entirely relieved; but after a few weeks or months the corn re-appears as before, and treatment is again required. Such merely palliative treatment, the stock-in-trade of thousands of chiropodists, should only be carried out alone in exceptional cases; we should aim at *curing* the corn—i.e., removing it and *preventing its recurrence.*

1. *To get rid of the corn.*—The foot is soaked in hot water (105° F.) for half-an-hour, the hard part of the corn is then gently rubbed away with a file, and glacial acetic acid applied to the base of it. It is then covered with india-rubber sheeting, of the same quality as that used by dentists in making a rubber dam, fixed in position by two elastic bands around the foot or toe, one distal and one proximal to the corn. This is removed morning and evening and the acid reapplied for two to three days until the site of the corn begins to feel tender; application of the acid is then stopped and the rubber covering used alone. By this time the corn with the immediately surrounding skin is white and dead-looking; after another two days, if not before, the core of it can be completetly removed by rubbing firmly with a gauze swab. The rubber is now left off altogether; lint spread with boric ointment is applied to the site of the corn, and reapplied twice daily for two or three days more. The surrounding parts then soon regain their normal appearance. For this treatment to be effectual the patient should not use the foot while it is being applied. If the corn is inflamed the inflammation must be entirely relieved by fomentations and rest in bed before this treatment can be carried out.

2. *To prevent its recurrence.*—To do this one must remove the causes producing it, the two commonest being a contracted state of the toes and improperly shaped boots. A condition frequently met with is where the toe is hyper-extended at the metatarso-phalangeal joint and flexed at the proximal interphalangeal joint; this deformity, when exaggerated, as it often is in the case of the second digit, is known as "hammer-toe." The result of this deformity is a corn on the sole of the foot beneath the head of the metatarsal and another on the dorsum of the toe over the prominent interphalangeal joint. No amount of treatment directed to the region of the corn will prevent its recurrence if the contracted state of the toes be not remedied. The extensor tendons of each contracted toe must therefore be divided subcutaneously; in a severe case it may be necessary to divide the flexor tendons too. Thereafter the toes must be prevented from contracting again by gentle passive stretching morning and evening. If there be present an actual condition of "hammer-toe" it must be dealt with by excision of the joint in the ordinary manner.

Having got the toes straight, and having removed the corns, it is now essential that the patient be fitted with boots the shape of his feet. These must be made to measure on fresh lasts by a skilled bootmaker; it is useless to attempt to fit such a patient with ready-made boots or shoes. For often one foot is $\frac{1}{4}$ in. to $\frac{1}{2}$ in. longer than the other, and when one boot is a good fit the other is too big or too small. Also, only rarely is the boot broad enough in the tread to allow the foot to spread properly, and it is almost invariably the wrong shape—that is, instead of being "straight on the inside," with the end of the boot opposite to the big toe, the end is opposite the third toe, so that the former is pushed out, producing in time the deformity of hallux valgus. When the big toe is pushed out by an improperly shaped boot it either pushes the other toes out, so that the whole foot "treads over" the outer side of the boot, or less commonly it overrides the second toe, or causes such cramping of the toes that any toe may overlap or be overlapped by the next one. No permanent improvement can be effected in these deformities, and in the corns produced by them, unless the patient be fitted with correct footwear. Apart from the latter, the best treatment for slight hallux valgus or for overlapping toes is the wearing of digitated socks or stockings during the daytime and the use of indiarubber "toe-dividers" at night, which treatment must be persisted in for some years.

When consulted by a chronic case of painful corns our practice should be to send the patient to hospital or nursing home and at once commence the acetic acid treatment. On the second or third day if any toes be contracted the tendons keeping them so are divided subcutaneously with a fine short-bladed sharp-pointed tenotome, under gas and oxygen; and on the fifth or sixth day the bootmaker arrives to measure the now much improved feet for suitable boots; at the end of another week the boots are ready, the corns have been got rid of, the shortened tendons have now all become lengthened, and the patient can leave for a week's convalescence at home. The only after-treatment necessary is gentle stretching of the toes into the over-corrected position, carried out by the patient's own fingers for a minute or two morning and evening for some months, and the long-continued wearing of boots and shoes made on the new lasts. The patient thus obtains permanent relief from painful corns from which he may have been suffering for a generation.

With regard to digitated socks—1. Their use is seldom necessary for all the toes; as a rule, only one or at the most two toes require restraint. 2. Unless they fit perfectly, they soon cause sores and blisters. 3. It is better, therefore, for the patient to wear ordinary socks half a size larger than he usually takes, and convert them into digitated socks for the particular toes required by sewing the plantar and dorsal parts of the sock together parallel to and on either side of the toe which is to be kept straight. A pocket is thus formed into which the affected toe can be slipped. 4. When digitated socks are worn, whether of the kind just described or not, foot powder must be sprinkled between the toes every morning to avoid chafing.

Hallux valgus.—As regards the treatment of the corn produced by this deformity, much depends on the position of the abnormal bony projection beneath it, and upon the presence or absence of a bursa beneath the corn. If the bony projection is quite clear of the ground when the patient is standing, as is usually the case, it should be removed by operation, the corn having been previously got rid of as described; but if it form part of the bone on which the patient stands removal by operation is contra-indicated. Then again, if there be a bursa beneath the corn—that is, if the condition known as bunion be present—no amount of local treatment can get rid of both the corn and the bursa; and after a course of local treatment to the former the latter must be excised by operation. Such an operation is, however, not worth doing if the bony projection beneath cannot, for the reason given above, be chiselled away, and therefore there are some cases of this condition which *cannot be cured:* these must be treated palliatively by the wearing of a rubber or papier maché shield to protect the part, in conjunction with specially shaped boots and shoes of soft leather.

It may be added that the circular corn-plasters are often very useful in protecting a corn from pressure, especially in the sole of the foot, under the head of a metatarsal bone. Such a corn is difficult to cure, because the patient will not lie up for a sufficient length of time, and protection is often the only treatment he will accept.

I am, Sir, yours faithfully,

PAUL BERNARD ROTH, F.R.C.S.Eng.,

Surgeon, Kensington General Hospital; Senior Orthopædic Clinical Assistant, London Hospital; Captain, R.A.M.C. (S.R.).

Harley-street, W., April 30th, 1915.

TREATMENT OF "INCRUSTED CYSTITIS" BY SUPRAPUBIC DRAIN AND INTRAVESICAL INJECTION OF LACTIC BACILLI.

To the Editor of THE LANCET.

SIR,—With reference to the letters on this subject in THE LANCET of May 1st and 8th the following may be of interest. During 1905 and 1906 while working at the subject of suprapubic drainage I frequently washed out patients' bladders affected with "incrusted cystitis" with acidum aceticum dilutum (℥ ii. ad O i.) and acidum hydrochloricum dilutum (℥ i. ad O i.), and the solution of the phosphates was rapid and painless unless the acid happened to flow over an ulcer or crack in the skin when it would give rise to considerable pain. It seemed to me at the time that the action of the acid gave rise to a much larger quantity of mucus in the urine than had been present before. Whether this was due to mere chemical precipitation from the alkaline solution or to a stimulation of the cells to produce more was not clear, but the persistence of excess of mucus after lavage was stopped pointed to the latter as being the cause. The results were better if the bladder was washed out with a dilute solution of sodium hydrate after the acid had acted, and if this washing out was also done before the acid was employed, so as to dissolve the mucin, the solution of the phosphates by the acid was very rapid.

It would be valuable to hear the opinions of those who have used the lactic bacilli method on these points—viz., Does the treatment give rise to more or less mucin formation than does treatment by lactic acid alone, and is the action of the acid which is produced bacteriologically in a nascent state greater and more rapid on phosphates and bacilli *in vitro* than the action of ordinary lactic acid in solutions of equal strength? It seems to me that the question of disinfection in such cases is so closely bound up with the removal of the foreign body (phosphate) that observations on these points will be most valuable. This is especially true just now when bullet wounds of the bladder and surrounding bones and soft tissues are giving rise to so much misery, suffering, and death.

I am, Sir, yours faithfully,
G. H. COLT.
Aberdeen, May 10th, 1915.

STOMACH *V.* HEART IN RELATION TO PRÆCORDIAL PAIN AND SUDDEN DEATH.

To the Editor of THE LANCET.

SIR,—The following passage occurring in Sir R. Douglas Powell's interesting letter in THE LANCET of May 1st confers upon the algesic symptom the status of a recognised place in the contents of the angina pectoris syndrome: "There is, of course, no doubt as to the existence and in some degree the diagnostic value of localised 'algesia,' or, as I should prefer to say, surface pains, and points of tenderness in angina pectoris, as in association with most forms of visceral suffering, and a nerve centre may become hypersensitive from repeated excitation." A state of hypersensitiveness in nerve centres is in other words a state of neurosis. This view is in accordance with that expressed in my letters to THE LANCET of April 3rd and 24th. But if the presence of a neurosis be admitted, the conclusion follows that the status of the neurosis in the syndrome is that of predisposing cause. Sir Douglas Powell refers to another solution to which he attaches greater importance—namely, that coronary disease is the operative causal agency in the case which had been reported by me. With submission to the better opinion of Sir Douglas Powell, I would bring certain facts before your notice for consideration which appear to me to place insuperable obstacles in the way of the application of the Jennerian doctrine to cases of the type which I have described.

Precise methods of cardiographic record recently introduced and employed in research furnish ample proof that the myocardial functions of Gaskell, without exception, are working after a normal manner during the course of the anginal seizure. Hence the theories of claudication and cardiac spasm become untenable. The hypothesis of the "tender" artery is open to the objection that arteries lying near the surface which offer direct means of examination may pass through all stages of degenerative change without manifesting any signs of tenderness upon pressure. Moreover, post-mortem examination not infrequently reveals extensive coronary and aortic disease in cases which had sustained for many months previous to death exceedingly high blood pressure without the patient having been conscious of any præcordial or other thoracic pain.

Difficulties which beset the explanation of the following list of phenomena occurring in the angina pectoris upon any hypothesis based upon coronary or aortic disease, as the predisposing cause, are apparent.

1. Pain in the course of intercostal nerves. Spasm of intercostal and recti abdominis muscles, algesia, vaso-motor disturbances including increased systemic blood pressure, cardiac symptoms, vagal inhibition, eructations of flatus, retching, vomiting, the influence of gastric hypertension in the excitation of seizures, and the effects of gastric deflation in determining the subsidence of seizures.

2. Post-mortem statistics indicate that the frequency of coronary disease is not in greater ratio in subjects of angina pectoris than in subjects of indifferent visceral arterial disease. In a series of 398 cases of visceral arterial disease, the subjects dying at an average age of 45 years, Dr. Harlow Brooks, professor of pathology, New York University, observed in the course of his ordinary necropsial duties 270 instances of coronary disease, a ratio equal to 67·8 per cent.[1] Some figures relating to the frequency of coronary disease in the angina pectoris are available for comparison. In 244 cases of angina pectoris collected by Tacchi,[2] Sir John Forbes,[3] Lussana,[4] Wilde,[5] Gothair,[6] Huchard,[6] and Osler,[7] coronary disease was observed in 52 per cent. of the subjects. The largest ratio appears in Professor Osler's list, in which coronary disease was found in 13 out of 17 cases, the percentage being 76·4.

3. Professor Osler gives the age periods of mortality from angina pectoris. I quote from his Lumleian lectures on the subject. Under 30 years, 9 cases; between 30 and 40, 41 cases; between 40 and 50, 59 cases; between 50 and 60, 80 cases; between 60 and 70, 62 cases; between 70 and 80, 13 cases; above 80, 3 cases.[8]

According to Professor Osler's figures, which correspond fairly accurately with those of the

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[1] American Journal of the Medical Sciences, May, 1906, p. 781.

[2] Twentieth Century Practice of Medicine, vol. iv., p. 441.

[3] Ibid., p. 473. [4] Ibid., p. 473. [5] Ibid., p. 439. [6] Ibid., p. 439.

[7] Lumleian Lectures, 1910.

[8] Ibid., THE LANCET, March 12th, 1910, p. 698.

Registrar-General, the incidence of death from angina pectoris after 60 years of age declines year by year until at 80 it approaches nullity, whereas during the same age periods among the general public the incidence of coronary disease is increasing year by year until it reaches universality.[9]

Sir Douglas Powell observes that the fact of præcordial pain appearing after marked exertion is suggestive of aortic disease. But permit me, Sir, to point out to you that muscular effort excites paroxysms in a class of cases which boast for their pathology the segmentary neuroses. I refer to the class of paroxysmal spasmodic complaints associated with the musculature of the alimentary canal and other abdominal visceral cavities. Included in this class are: trismus of tetanus, palato-pharyngeal spasm of hydrophobia, œsophagismus, gastrismus, entero-spasm, biliary and renal colic, colismus, tenesmus, strangury and utero-spasm; paroxysms in all these instances alike are induced or aggravated by muscular effort. I may also add in this connexion that the spasm in certain of these disorders is reduced, as in the angina pectoris, by administrations of nitro-glycerine.

If the angina pectoris be included in this class of paroxysmal spasmodic disorders, as suggested by Heberden, a rational explanation is furnished for every symptom of the complaint and for every phase of it.—I am, Sir, yours faithfully,

Streatham Hill, May 4th, 1915. H. WALTER VERDON.

THE MEDICAL PROFESSION AND THE NEEDS OF THE ARMY.

To the Editor of THE LANCET.

SIR,—May I be allowed some space in your columns to suggest to your readers, including those in authority, a few points as to why there exists dissatisfaction among medical men who have already given their services to the army, and also why some who have not yet joined are hanging back from so doing.

The leading article in THE LANCET of May 8th puts the case of the War Office plainly and judicially, but from what I gather from those who are serving as medical officers in the Territorial Forces the causes of dissatisfaction are other than those to which you refer.

I can vouch for the following matters:—Grievances settle round two points, pay and promotion, not so much *per se* but as regards the inequality between the Territorial Forces and the forces popularly known as Kitchener's Army. A lieutenant in the R.A.M.C. (Territorial) gets 14*s.* per diem, together with 3*s.* for billet and 1*s.* 9*d.* per diem for rations. A lieutenant in "Kitchener's Army" gets £1 4*s.* per diem and £60 on release from service. Promotion, too, is slow; I know of at least one instance in which an officer was gazetted some seven months ago, he is still a lieutenant, although he has been doing a major's work (in command of a section) all the winter and spring. A recent application for promotion, backed by his commanding officer, was refused on the ground that by the Territorial Forces Regulations a lieutenant R.A.M.C. must have seen at least three years' service. Other executive branches of the service get rapid promotion; for instance, a man who was gazetted second lieutenant in October, 1914, in the Army Service Corps is now a captain.

The Territorial R.A.M.C. men only joined originally for home service, but an Army Order has been made insisting on service anywhere required, whether abroad on active service or in India; and it must be remembered that Territorial R.A.M.C. are frequently almost all elderly men, for the younger men naturally join Kitchener's Army. The question of pay is not the only grievance. The question of promotion is felt to rankle, for the refusal of it seems to show a grudging recognition of the spirit which led elderly practitioners to volunteer, and which the War Office would do well to foster rather than, as it is doing, to dash.

I am, Sir, yours faithfully,

May 11th, 1915. H. P. CHOLMELEY.

To the Editor of THE LANCET.

SIR,—Many eligible men still abstain from giving up lucrative practices and offering their services for the following reasons:—

1. All medical officers, though their work and risks may be identical, are not treated alike. Treatment depends on whether a man is: (*a*) a temporary Royal Army Medical, in which case he receives the rank of lieutenant but the pay of 25*s.* a day (major's pay); (*b*) a permanent Royal Army Medical, in which case he receives the rank of captain and draws captain's pay; or (*c*) a Territorial Royal Army Medical, in which case he receives the rank and pay of lieutenant (14*s.* a day pay and 4*s.* 9*d.* allowances at times). The Territorial medical officer has almost invariably made bigger sacrifices, yet receives the least pay.

2. Certain medical officers acting in a combatant capacity have offered to transfer to the R.A.M.C. and have not been permitted to. (Their applications have not even been forwarded.)

3. Many R.A.M.C., both Regulars, Temporary, and Territorial, have for months past been kept at home only partially employed when they have repeatedly asked to be allowed to go abroad, their work being carried on at home by civilian doctors. Is it not reasonable for them to ask themselves whether the War Office can really be so very short, as it does not appear to make the best use of what material it already has at its disposal.

I suggest the following as a remedy: 1. Do away with the arbitrary distinction between Territorial and Regular. Classify, if necessary, into home and imperial service medical officers, but let all army doctors come under the same departmental control and let them all receive the same scale of pay. 2. As it takes approximately five months to train a combatant officer, but five years to train a medical officer, let all doctors at present serving in a combatant capacity revert to their professional work. 3. Do away with the medical officer for regimental work at home and substitute the part-time civilian practitioner, who could, without much heavier work, see the 20–30 army at the same time as he sees his panel patients. And lastly, if it were found that the Admiralty have a surplus of medical officers, could no amicable arrangement be arrived at whereby either a united medical service could be formed or even a united medical reserve service on which either could draw as requirements arose?

I am, Sir, yours faithfully,

May 7th, 1915. LIEUTENANT R.A.M.C. (T.F.).

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[9] American Journal of the Medical Sciences, May, 1906.

The War.

THE CASUALTY LIST.

THE casualty lists published since our last issue contain the following names of medical officers:—

Wounded: Lieutenant P. Cagney, R.A.M.C. (attached 2nd Essex Regiment); Lieutenant R. C. Neil, R.A.M.C. (attached 6th Middlesex Regiment); Surgeon Charles F. A. Hereford, R.N.V.R.

Missing (believed to be prisoner): Surgeon Probationer William W. K. Brown, R.N.V.R. (H.M.S. *Maori*).

Captain Howard Tomlin Hunter, 6th Northumberland Fusiliers, T.F., who was killed at Ypres on April 26th, was an M.B., B.S. Durham, 1910. He received his first commission in the Territorial Forces in 1906 and was gazetted captain in 1912.

MEDICAL ORGANISATION AT THE FRONT.

A most timely article has been communicated to the press by an "Eye-Witness present with General Headquarters," in which the whole subject of the treatment and evacuation of the wounded is ably dealt with. The fortunes of the wounded man from the time of his wound until the reception in a base hospital have been described in these columns. In a way the whole story will be familiar to medical men and to some extent to the public; but "Eye-Witness" has given a consecutive narrative, while hitherto only chapters dealing with this, that, or the other point have been published, and considerable experience has sometimes been assumed for the reader.

The narrative begins by describing the organisation in the field, at the head of which is the Director-General. "Eye-Witness" says:—

> The medical organisation in the field consists at the front of two kinds of formations, those of armies and those of divisions. The former are under a Director of Medical Services, who, while responsible for the technical working of all units and branches of the medical service within his army, has under his direct control the large clearing stations established within easy reach of the railway, the motor ambulance convoys, and all sanitary arrangements in the particular army area. The divisional formations are under the Assistant D.M S of the division, who controls the field ambulances, dressing stations, aid posts, and sanitary sections in the divisional area.
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> To show exactly how these formations work, it will be as well to trace the normal progress to the rear of a man who has been struck down in the firing line. Wounded while advancing, he has possibly been left lying in the open under a hail of shrapnel bullets which are striking the ground all round. From this hazardous position he is rescued by two stretcher bearers, who, choosing their moment, rush across, pick him up, and carry him back to the shelter of a trench. These bearers may either be from his own unit—16 men of which in the case of an infantry battalion have been trained in first aid and stretcher drill—or they may be men of the Royal Army Medical Corps belonging to a bearer subdivision of a field ambulance. They will take him to his "regimental aid post," probably situated in a dug-out, in a cellar, or in some sheltered spot giving cover from fire, where he will receive first aid from the R.A.M.C. officer attached to the battalion. From there he will be conveyed either on a stretcher or, if circumstances permit and a road is handy, in a horsed ambulance wagon to the nearest dressing station.

Divisional Field Ambulances.

The wounded man now passes into the charge of the divisional field ambulances, the bearer subdivisions of which collect the wounded, while the tent subdivisions form dressing stations. At the dressing stations, which are pushed as near as possible to the front, his wound is attended to and he is injected with antitetanic serum. He is then removed by motor or horsed wagon to a larger dressing station further to the rear, where he must remain for some time during the process of sorting the wounded, but where he receives food and drink and is made as comfortable as the circumstances allow. He is now prepared for transport to the

Casualty Clearing Station.

> So soon as he is placed on a motor ambulance wagon (says "Eye-Witness") belonging to a detachment of the Motor Ambulance Convoy and starts on the next stage of his journey he passes out of the hands of the division into the formations which are under the direct control of the army. These motor convoys, the first units of the kind that have ever been used in war, each consist of a large number of vehicles, with the necessary officers and other ranks. A proportion of these units are allotted to each army. The Casualty Clearing Stations, to one of which the wounded man is now brought, are under existing conditions generally situated at the railheads, so that patients can be carried direct from them to the ambulance trains, though this would not always be the case in field warfare; for instance, where troops were advancing every day. Their position, however, is always chosen with a view to facilitate despatch by ambulance or train. They are not hospitals in the true sense of the word; but a proportion of serious cases, such as those of certain kinds of injury to the head or abdomen, which cannot be moved without danger, may be retained in them for a considerable time. Although equipped and staffed to deal normally with 200 patients, they have a sufficiently elastic organisation to be able, if necessary, to cope with much larger numbers during the progress of a battle, and special arrangements are made for temporarily augmenting the staff when severe pressure is expected.

"Eye-Witness" mentions here that during the operations at Neuve Chapelle one clearing station admitted on an average nearly 800 wounded daily for four consecutive days, passing 3653 cases to the base in six days. At the clearing station, where nursing sisters and beds first appear on the scene, the length of stay is determined partly, as has been mentioned, by the nature of the wound, but mainly by the railway facilities. Once on board the train the patient leaves the "collecting zone" and enters the "evacuating zone."

Ambulance Trains.

"Eye-Witness" continues:—

> There are 14 ambulance trains now running. Each has a personnel of 3 officers and 47 other ranks of the Royal Army Medical Corps, and 3 nursing sisters. The number of wounded conveyed on any journey depends on the nature of the injuries—i.e., whether the sitting-up or lying-down cases predominate. With the exception of certain specially designed trains, which have been built by some of the great railway companies in England, the rolling stock is made up of various kinds of coaches and "fourgons" belonging to the French railways, which have been adapted for the accommodation of wounded, staff, kitchens, dispensaries, and stores. The number of trains will eventually be made up to 24, the coaches for the additional units required being now under construction in England, or already in transit to France. Several of these trains have been presented to the nation by private donors.

On arrival at a base the wounded man is carried by motor ambulance to a permanent hospital.

Permanent Hospitals.

> These hospitals are of two kinds, says "Eye-Witness"—general and stationary—the difference between the two lying chiefly in the number of patients they are designed to accommodate. The first are the largest and are elaborately equipped, being fitted with all the modern appliances of the first-class hospitals met with in civil communities. Stationary hospitals are not necessarily situated at a base, but may be located at different points on the lines of communication, and, in spite of their title, are intended to be more mobile than the general hospitals.

A third category of hospitals found at the bases is composed of Red Cross or voluntary hospitals. The personnel and equipment of these are provided by the society or subscribers who organised the unit, but each is under the command of an officer of the Royal Army Medical Corps. These establishments vary in capacity. Some are directly provided by the British Red Cross Society, and others work under its auspices. The remainder are the Australian Voluntary Hospital, which was the first of its class to land in France during the early part of the war, and the Liverpool Merchants' Hospital, which has only quite recently arrived. The Allied Forces Base Hospital, which has rendered useful service, has been temporarily closed, but will reopen at an early date.

All the base hospitals are established in huts, tents, or in buildings suitable for the purpose, such as hotels or casinos. The duration of the patient's sojourn in one varies directly with the nature of his wound. Very severe cases, which it would he inexpedient to move, and slight cases likely to be fit for duty or discharge to a convalescent camp within three weeks are retained. Those which are unlikely to recover within three weeks, and will not be harmed by further transport—and by far the largest number comes within this category—are sent to England so soon as accommodation is available on board a hospital ship.

"Eye-Witness" concludes his bird's-eye view of the medical work at the front by pointing out that it is founded on two leading principles: the maintenance of the mobility of the army by relieving the fighting troops quickly of non-effectives; and secondly, the rapid removal of the sick and wounded to places where they can be treated in the most favourable conditions. The arrangements for the evacuation of the sick and wounded along lines of communication, which are also required for the bringing up of food and ammunition, necessarily require a high degree of organisation. By pointing out that, inasmuch as nothing can be allowed to interfere with the needs of the fighting troops, the care of the wounded will now and again depend upon circumstances out of the control of the Army Medical Service, "Eye-Witness" answers in a sentence a great deal of ill-informed criticism.

How general the feeling is that the Royal Army Medical Corps has highly distinguished itself during the war is shown by the statement that "Amongst the many and diverse duties which fall upon the Royal Army Medical Corps during war perhaps none present more intricate problems than those which arise in connexion with the evacuation of wounded. And it is safe to say that during the present campaign none have been performed with greater efficiency, often in the face of immense difficulties imposed by the nature of the military operations."

He concludes by alluding to the conveyance of the wounded by barges, a method which has been employed in Northern France for the evacuation from Casualty Clearing Stations of seriously wounded men. The lives of such men might have been endangered by the jolting associated with train or motor journeys, and many critical cases have been carried by barge from the neighbourhood of the front to hospitals on the lines of communication, the barges having been specially converted into hospital craft and fitted with operating tables and necessary accessories.

ITALY AND THE WAR: ADDRESS BY PROFESSOR BACCELLI.

While the "Third Italy" was unveiling the memorial in marble on the Genoese seaboard, whence Garibaldi and his "thousand" embarked for the emancipation of the two Sicilies, she was at the same hour (writes an Italian correspondent) bidding Godspeed to her medical youth on the mission reserved for them in the consummation of her unity. The eloquence of D'Annunzio before the one assembly had its echo in the glowing words of Guido Baccelli before the other—words addressed to the Roman students at the close of the Medicus Annus in the Policlinico—Baccelli's own creation.

Baccelli's theme was the "Medico Soldato," and in developing it he expatiated on the whole field of medicine in its relation to war, starting from the Hellenic foretime, when the death of Machaon, the surgeon-general of the Greek army before Troy, shed dismay throughout the camp, down to the second decade of last century, when the great Napoleon pronounced his monumental *éloge* on Baron Larrey, the head of the medico-military staff. The Emperor's tribute to the service of that staff in maintaining the moral as well as the physical efficiency of his troops inspired the Roman physician to a luminous illustration of what the medical art can achieve under the far more complicated and difficult conditions of twentieth century warfare, winding up with authentic instances of such achievement drawn from Italy's recent annals, in which the regimental surgeon under fire, after exhausting the resources of his *métier* in tending the wounded, had himself to become a soldier, and by his prowess and skill in the fighting line, against overwhelming numbers, aided his combatant compatriots to retrieve the day when seemingly lost. Very significant in the present phase of what Italians call this "inhuman contra-human war," was Baccelli's allusion to Rome's victories over her barbarous enemies beyond the Alps, victories culminating in the triumphs recorded on the Antonine Column, in words still legible—

> Marcus Aurelius Imperator
> Armenis parthis *Germanisque*
> Bello maximo devictis
> Triumphalem hanc columnam
> Rebus gestis insignem
> Antonino Pio patri dedicavit.

In connexion with this allusion Baccelli recalled as a "historical incident," the request made to him by the Kaiser Wilhelm for a description of the habiliments of the Marcomanni, as engraved on the column when these were prisoners of war at the hands of the Roman legions. From this digression the orator proceeded to show how, if the military art can devise her methods of inflicting wounds and extinguishing life, the medical art is not behindhand in coping with these. Over and above the superior sanitary conditions in which the soldier lives in camp or quarters, the advance in medicaments and the means of introducing them into the system is not less conspicuous, as illustrated by the largely extended and reinforced "armamentarium chirurgicum" and the methods of treating what, for instance, used to be an "opprobrium" of military surgery—tetanus. Amplifying this thesis with illustrations from his own clinique, particularly in the field of intravenous injection, Baccelli paid a glowing tribute to the work of all the belligerent nations now at war, and drew from it the hopeful, the reassuring, augury that the humanely inspired function of the healing art will one day react in a moral sense on the destructive instincts still present in man, pressing home the conviction that civilisation has nobler ends to aim at and to achieve than those of international jealousy and antagonism, and that the forces now at deadly variance may yet be reconciled to coöperation in unison against the perennial adversary, insanitation and disease.

Quod felix faustumque sit was the aspiration evoked by this humanitarian forecast from the crowded audience, professional and lay, that hailed with successive salvoes of applause the veteran orator as he resumed his seat.

TYPHUS FEVER IN PRISONERS' CAMPS IN GERMANY.

The United States Ambassador in Berlin has warned the British Foreign Office through the United States Ambassador in London that typhus fever has broken out in the following prisoners' camps in Germany:—

Altdamm.
Cassel.
Chemnitz.
Gardelegen.
Langensalza.
Sagan.
Schneidermuhl.
Wittenberg.
Zerbst.
Zossen.

Letters will not be despatched from these camps owing to the risk of transmitting the disease.

THE DENTAL NEEDS OF THE ARMY.

That more dental surgeons should be attached to the Expeditionary Force has been the opinion of a good many observers. A vast amount of dental work is waiting to be done. This will cause no surprise to those acquainted with the dental conditions of this country, and more especially to those who have had the opportunity of seeing the condition of the mouths of those accepted as recruits. Man after man has been returned from France suffering from conditions traceable to the teeth, conditions which could easily have been avoided by a little foresight. It is known that during the Boer War nearly 2500 soldiers were invalided home from South Africa on account of teeth, and it has been computed that this meant a financial loss of nearly a quarter of a million to the nation. Yet the lesson was not learnt, and no adequate steps were taken.

On the outbreak of the present war there was no machinery for dealing with this serious question of dental disease in the soldiers, and the work of attempting to deal with it devolved mainly on the philanthropy of the dental hospitals and of private practitioners, and to their credit be it said that they did all that was possible. Subsequently, during September and October, about 12 dental surgeons were sent to France, and since then others have gradually been appointed to various centres. The number appointed is, however, quite inadequate to deal with the extraordinary amount of dental disease, and reliance has still to be placed on the charitable institutions which in many instances have, we believe, entered into business arrangements with the War Office. The provision made is still inadequate and in many ways most unsatisfactory. In the first place, dentistry, although a branch of medicine, requires special knowledge, and it would therefore seem advisable that for this section of the army medical work the Director-General of the Army Medical Service should be able to call for the best expert aid in general organisation. In the second place, the work which is being done by the various officials of dental hospitals and by dental surgeons attached to the general hospitals is not officially recognised. In many cases these officials are medical men, and it would be more satisfactory if they were accorded rank as it is accorded to other civilian medical men employed on war service. The absence of proper recognition of the workers makes it extremely difficult to obtain the service of the younger men. To our knowledge there has been a great trouble in persuading young dentists that they are doing better work by remaining at home and attending to the dental needs of the soldiers than by joining the forces as combatants.

At the recent meeting of the Edinburgh Dental Hospital Lieutenant-Colonel Sir Joseph Fayrer, colonel in command at Craigleith Military Hospital, referred to the want of a properly organised Army Dental Department, and hoped that at every examination of the Royal Army Medical Corps there would be vacancies for dental surgeons who should also be qualified otherwise; we presume he meant medically qualified. There is much in this suggestion. The army dental surgeon does not need to be an expert in dental mechanics, but rather one capable of performing surgical operations on the teeth, knowledge which a medical man can acquire in a period of possibly six months. It is quite clear that the near future will see a demand for dental surgeons for the naval, military, and civil services; such men will not require the elaborate mechanical training now demanded by the various licensing bodies, rather will these dental surgeons be required to possess a good knowledge of allied medical conditions, so as to give them a basis for forming general conclusions. We think that those responsible for dental education should seriously consider the question and make the curriculum of the dental students less mechanical and more medical in its character.

THE Metropolitan Counties Branch of the British Medical Association have appointed a War Emergency Committee, and a circular has been sent to the members asking them to fill up and return a form indicating their ability to offer to the War Office whole-time or part-time service.

THE KING GEORGE HOSPITAL.—The working of the dental department of the King George Hospital has now been arranged so that one of the honorary dental surgeons will be in attendance on each morning of the week. Each dental surgeon has strengthened his department by the appointment (with the approval of the committee of management of the hospital) of a qualified clinical assistant, and he has, moreover, been specially provided with an anæsthetist. In this way the work of the dental department ought to be carried on with equal smoothness and efficiency.

The three rooms which have been set aside for the dental work are upon the top floor (the fifth) of the hospital, and are provided with large windows with a north aspect. In the afternoon these same rooms will be at the disposal of the surgeons who are in charge of the laryngeal and aural cases. Apparently, it has not yet been decided if qualified clinical assistants will be called for in connexion with these cases; but inasmuch as a great deal of important operative work will be taking place such appointments might prove of great value and importance, whilst the ordinary resident medical officer can hardly be expected to possess that special knowledge which might be desirable.

THE SCOTTISH WOMEN'S HOSPITALS.—The scope, character, and services of the Scottish Women's Hospitals were well explained by Dr. A. Louise McIlroy recently to a meeting at Airdrie, near Glasgow. Dr. McIlroy referred to the objections that had been promulgated against the Scottish Women's Hospital scheme. To the charge that it was competing with the Red Cross Hospitals it was replied that the British Red Cross was occupied in the service of our own troops, who were the best looked after troops in the world, while the women's hospitals were devoting their attention to our Allies. The Red Cross itself had materially assisted them and there was no overlapping. As to the expressions of apprehension concerning the fitness of women doctors to engage in such strenuous and arduous work and to undertake the very grave operations, Dr. McIlroy said that at first the British War Office would not employ women, so one little band of women doctors had gone out on their own account, and had done so well among the soldiers that they were taken on to Boulogne. They had since come back to London, where the War Office had given them a hospital of 500 beds to look after, staffed entirely by women. Dr. McIlroy described the hospitals of the Scottish women, which were divided up into units of 100 beds, with a fully equipped staff of women doctors, nurses, X ray apparatus, and laboratories on as complete a scale as the large infirmaries at home. The efficiency of all this equipment had been absolutely dependent on the generosity of the Scottish people. Dr. McIlroy contrasted the system and provision in Flanders and France, where they were remarkably well provided for and attended to, with that in Serbia, where they had to deal with, not only the wounded, but small-pox, diphtheria, and, it was said, plague, which was beginning to appear in some parts of Southern Europe. More than half of the Serbian doctors had died from typhus fever, and daily 10, 15, and 20 patients were dying. The great need of Serbia was more doctors and trained nurses, especially those with experience in fevers. They were now providing fully equipped tents and marquees as hospitals. They were fighting the disease that would follow the war, which it was their duty to keep from spreading to the other side of Europe.

ZEPPELINS IN THE MOUTH OF THE THAMES.—Southend-on-Sea was visited by Zeppelins just before day-break on Monday morning, and about 100 bombs, mostly of an incendiary character, were dropped on the town and its outskirts. Outbreaks of fire occurred in five or six places, and damage estimated at £20,000 was done. One woman unfortunately lost her life, a bomb coming through the roof just over the bed in which she was lying asleep with her husband. The husband escaped with considerable injuries about the head and neck. One of the houses which was partly burnt out was that of Mr. H. W. Hull, a local medical practitioner, who is at present serving in the Royal Navy as surgeon on a hospital ship in the North Sea. He happened to be at home on 48 hours' leave of absence, and was awakened to find his house on fire.

RUSSIAN VITAL STATISTICS.—The Russian *Government Gazette* has just made a statement with regard to the organisation of medical aid in Russia, based on published information from the Chief Medical Inspector. The figures do not deal with a later date than the end of 1912, but allow us, none the less, to gauge to some extent the national health of our great ally. The vast size of Russia, as well as the backwardness of enormous districts of the empire, accounts for the impossibility of acquiring and publishing more recent figures. The mortality in Russia fell in 1912 to 25·9 per 1000, or 3·2 per 1000 lower than the average mortality of the preceding 10 years 1902–1911. The birth-rate, which was 43 per 1000, was 2·5 per 1000 lower than the average of the preceding 10 years. The natural increase of the population was 17·1, or 0·7 per mille more than the average of the period named.

The mortality from infectious diseases in European Russia declined considerably in 1912, amounting to 397 per 100,000 of the population, whilst in the preceding year it was 467, and in 1910 635. Similarly there was a great decline in the cases of infectious diseases excepting measles and whooping-cough. Of the total number of cases of sickness registered 67 per cent. consulted doctors, and 33 per cent. assistants, who are recognized in Russia as a lower order of practitioners. 18·4 per cent. of the diseases registered referred to the alimentary canal; infectious cases accounted for 16·3 per cent.

The statistics concerning the medical profession are very interesting, as they indicate that the difficulty of finding medical officers for the Russian army may have been considerable. The members of the civilian medical profession at the end of 1912 numbered 22,772, plus 28,500 assistants, 14,194 maternity assistants, 7238 dental surgeons and dentists. And the number of pharmacists was 13,357. Of the medical men, 72 per cent. were in the towns and 28 per cent. in the rural communities. There was one medical man to 1450 people in the towns, but only one to 21,600 in the country. The average number of inhabitants in the empire per doctor was 7200—viz., 6500 in European Russia and 13,100 in Asiatic Russia.

The number of hospitals and refuges was 8110, with 219,978 beds, of which 171,514 were in general hospitals. There were 41,404 beds in psychiatric hospitals and 7060 in lying-in establishments. In all the hospitals there were 3,311,637 cases during 1912, of which 162,446, or 4·9 per cent., were fatal. The deaths in hospital made 3·8 per cent. of the total in the Empire. In the psychiatric institutions there were 92,989 cases, with a mortality of 9·2 per cent. In the lying-in houses and refuges there were 309,626 cases. The number of births was 256,374, or 3·6 per cent., of the total births in the empire; the mortality was 0·4 per cent. At 28 Pasteur institutions 37,935 subjects were treated, and the deaths numbered only 136.

VACANCIES FOR MEDICAL OFFICERS.—Three medical officers are urgently required to complete the establishment of the 2/1st Highland Mounted Brigade Field Ambulance. Particulars of duty, pay, &c., will be given on application to the Officer Commanding, 2/1st Highland Mounted Brigade Field Ambulance, R.A.M.C., Houghton Hill House, Houghton, Huntingdon.

WOUNDED ALLIES RELIEF COMMITTEE.—Dr. Isabel Ormiston, chief medical inspector of schools to the Government of Tasmania, and Mrs. Patton Bethune, who were sent as a Sanitary Commission to Montenegro, have arrived at Cettigne and report that the Montenegrin Government request the despatch of a self-supporting hospital unit and a supply of vaccines, as well as disinfectants, to combat the typhus epidemic in Ipek and the surrounding country. The committee is proceeding to equip a suitable unit.

The Belgian Army Medical Commission has requested the Committee to undertake the care of a number of tuberculous Belgian soldiers who have acquired the disease during the hardships endured last winter in the trenches. The Committee appeals urgently for premises in which to establish a home. If any owner of a house on high ground and at the seaside would be so generous as to lend it for this purpose particulars will be gratefully received by Mr. Albert Van der Velde, honorary hospital superintendent, Wounded Allies Relief Committee, Sardinia House, Kingsway, W.C.

A MOTOR-CAR VOLUNTEER CORPS IN EDINBURGH.—A meeting of motor-car owners was held on May 10th in the North British Station Hotel, Edinburgh, to consider the question of forming an Edinburgh section of the National Motor Volunteer Corps. Mr. W. L. Sleigh, who had been invited by the headquarters of the force to form a local section, explained that the principal objects of the body were to provide local assistance to the regular army transport in the event of attack, assistance to recruiting officers and officers visiting lines of communications, hospital and Red Cross work, &c. He stated that the services of the force had been regularly used by the War Office in districts where companies were organised, and that it was desired to have local centres formed so that the provinces should be linked together. Following the discussion of the proposal the meeting resolved to form an Edinburgh section of the force, and further resolved itself into a committee to obtain members. A subcommittee, consisting of Bailie Rusk, Mr. Sleigh, and Mr. J. Scott Law, were appointed to make arrangements for the proper organisation of the movement.

THE BRITISH HOSPITAL AT PORT SAID.—At all times the provision of adequate hospital accommodation at Port Said, that gate between the East and West, is an object of great importance, but it is easy to understand that it becomes an imperative necessity for our wounded soldiers and sailors in the Near East at the present time. The hospital is now making an urgent appeal for £10,000 for its completion and equipment, and those who wish to contribute may address themselves to Mr. Arthur Stanley, M.P., London Chamber of Commerce, 1 and 2, Oxford-court, Cannon-street, E.C.

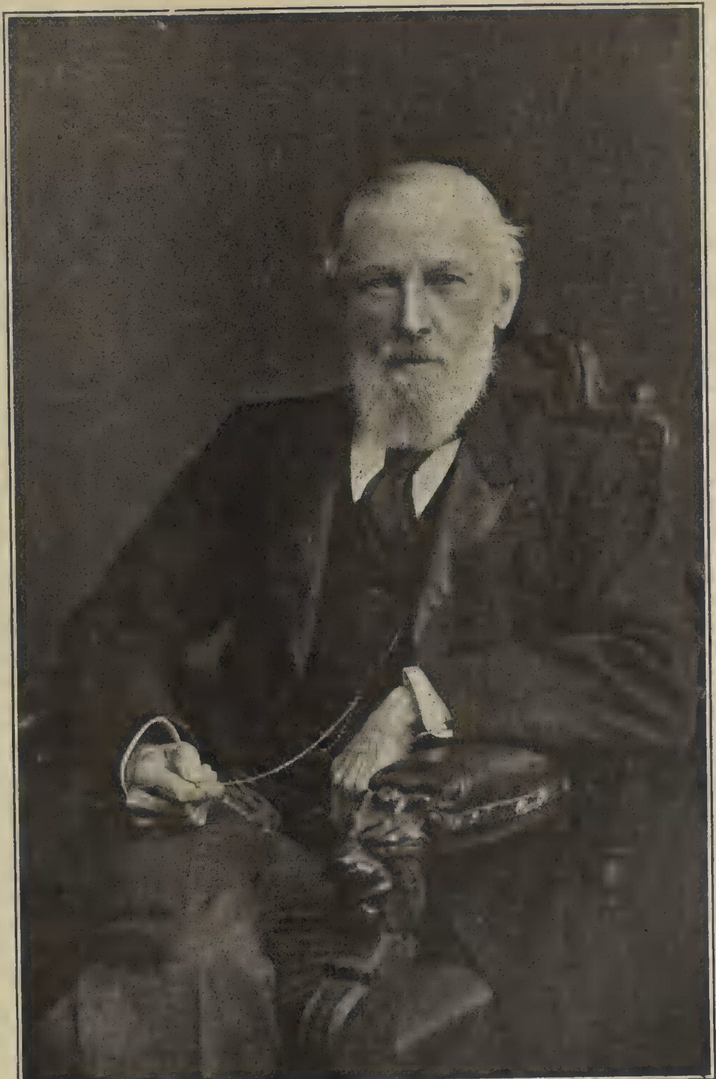
THE BELGIAN FIELD HOSPITAL.—Mr. H. W. Morrison has been appointed commandant of the Belgian Field Hospital, in succession to Mr. W. S. Perrin.

Obituary.

SIR WILLIAM RICHARD GOWERS, M.D. LOND. AND DUB., F.R.C.P. LOND., LL.D. EDIN., F.R.S.,

CONSULTING PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL, LONDON, AND TO THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN-SQUARE, W.C.

William Richard Gowers was born on March 20th, 1845, and was educated at Christ Church College School, Oxford, and at University College Hospital, London. He was apprenticed for some time to Dr. Simpson, a practitioner in Essex. He had a brilliant career at his hospital and at the University of London. He qualified M.R.C.S. in 1867, took his M.B. degree in 1869, and his M.D. in 1870, winning the gold medal in that year. In 1879 he was elected a Fellow of the Royal College of Physicians of London, and was appointed Goulstonian lecturer, taking as his subject "Epilepsy." In these lectures he embodied the results of a careful, methodical, and laborious investigation of 1450 cases of epilepsy, and the volume containing the substance of the lectures, published a year later, remains still one of the classical works on this subject. A second edition, embodying the results of observations on over 1500 additional cases, 3000 in all, was published in 1901. He was elected to the staff of University College Hospital and of the National Hospital for Paralysis and Epilepsy. He had previously acted as registrar at the latter institution. Although his early work was on diseases of the heart and blood, on which subject he contributed articles to Reynolds's "System," he had already been attracted to the study of nervous disease, and he made his great reputation chiefly on account of his work on these diseases. During the first part of his time at University College Hospital he was closely associated with Sir William Jenner, for whose character and abilities he always retained an almost reverent admiration. He was also for many years on terms of almost affectionate intimacy with his relative, Sir John Russell Reynolds, and these two masters of clinical medicine counted for much in his methods of work.



SIR WILLIAM R. GOWERS, F.R.S.

It is difficult now to realise the state of chaos in which the knowledge of nervous diseases, especially as regards pathology, was at the time Gowers began to work at them, and it is in great degree due to the extraordinary character of his work in investigating and systematising that our knowledge of these diseases is now perhaps more complete than of any other branch of medical science. The first great step in this systematisation was a lecture which he published in 1879 on the Diagnosis of Diseases of the Spinal Cord. This lecture, afterwards published as a separate volume, attracted much attention at the time. It was illustrated by the representation of a series of sections of the spinal cord, in one of which was represented the area of ascending degeneration which Bechterew subsequently described and named "Gowers's tract." But the lecture was really epoch-making because of the manner in which pathological anatomy and clinical symptomatology were brought into relation, and it laid the foundation of the wonderfully complete knowledge which we now possess of the organic diseases of the spinal cord. His volume on "Medical Ophthalmoscopy" was published soon afterwards and was of inestimable value and interest.

In 1885 Dr. Gowers published a volume on "Diagnosis of Diseases of the Brain." By this time the clinical and pathological observations of Hughlings Jackson, and the experimental work of Fritsch, Hitzig, and Ferrier had completely altered the conceptions of cerebral physiology and function, and Gowers's acute mind readily grasped the significance of their observations. In the volume referred to, which consists of 18 lectures, principles were laid down and rules enunciated which at the present day are perhaps a little extended but scarcely in any way altered. This book will remain for many years an indispensable part of every neurologist's library.

It would be impossible to enumerate all the articles which in this and in preceding years, and to a less extent in subsequent years, seemed to pour from Gowers's pen. We need only mention such articles as those on pseudohypertrophic paralysis, on canine chorea, on hydrophobia, and on many other subjects. These, admirable and valuable in themselves, were only facets, so to speak, of the great work on which he was engaged—the "Manual of Diseases of the Nervous System." The first volume of this, on Spinal Cord Diseases, was published in 1886; the second, on Diseases of the Brain and Functional Disease, in 1888. With the publication of the first of these volumes the author stepped at once into the very first rank of neurologists, and on its completion the great value of the work was recognised both in America and in Europe. It was reprinted in the United States, and it was translated into German, Italian, and Spanish. Second and third editions of the first volume were subsequently published; a second edition also of the second volume appeared. A third edition of the second volume, which was in contemplation, was never completed. Gowers also had it in his mind to cut down the "Manual" to one volume by omitting the anatomical and physiological parts. There is little doubt that this would have made an exceedingly useful clinical manual of nervous diseases, and one cannot but regret that it was never completed. In 1892 he also published his Lettsomian lectures on Syphilis of the Nervous System, delivered three years earlier.

The immense work which all the above publications involved, coupled with the anxieties of a large practice, unfortunately led to a breakdown in Sir William Gowers's health, which had never been very robust. This necessitated a voyage to South Africa, from which he returned much improved. In spite of the engrossing claims of his practice he continued to publish much useful matter. His Bradshaw lecture on Subjective Sensations of Sound, given before the Royal College of Physicians of London, and his Bowman lecture on Subjective Sensations of Sight, given before the Ophthalmological Society of the United Kingdom, are both valuable for the investigations and observations described in them, and suggestive because of the conclusions drawn from them, and a small volume on the "Borderland of Epilepsy" contains much that is interesting and useful. It has been translated into German. Several volumes of clinical lectures have also been published.

We are still too near the epoch in neurology so closely associated with the work of Gowers to estimate properly his position in it. Yet the scientific advances in that department of medicine have been so great and rapid as to make it easier perhaps to appreciate his great work without the danger of over-estimating its importance. It may be stated without fear of contradiction that Gowers was an extraordinary observer, accurate and painstaking, with a wide horizon and a sound judgment which made his deductions from observations both definite and reliable. He had a marvellous power of what might be called intensive deduction. He was a rapid reader and worker, and could crystallise the gist of much reading in a very few sentences. He had great capacity for work, and although he was not always an easy man to work with (for he did not "suffer fools gladly") yet no one was more appreciative of help and assistance than he was. His position in neurology was unique, because he was a great observer and a still greater expounder. His teaching power was remarkable, and to his out-patient afternoons at the National Hospital in Queen-square in the "eighties" must be traced in large degree the deservedly high reputation which that hospital enjoys as the chief centre of neurological teaching in this country at the present time. And in his publications, especially in his "Manual," this extraordinary power of assimilation of knowledge from all quarters, always enriching, sometimes modifying his own observations, together with the faculty of setting it all out in clear and graphic language, is peculiarly striking. The late Dr. Hughlings Jackson often remarked that he would always be grateful to Gowers because of the manner in which Gowers had expounded the Jacksonian theories. Yet if Gowers had not been the wonderful teacher and expounder that he was he would have been recognised as a great investigator and observer.

He was the recipient of many honours. He was elected a Fellow of the Royal Society. He received the Hon. M.D. of Dublin and was elected an honorary Fellow of the Royal College of Physicians of Ireland; he was an honorary member of the American Neurological Association, of the Netherlands Society of Psychiatry and Neurology, of the Russian Society of Medicine, of the Royal Society of Science of Upsala, of the Society of International Medicine of Vienna, and he was LL.D. of the University of Edinburgh. He received the honour of knighthood in 1897.

It might well be thought that a man who was responsible for so much medical work had no time to indulge in hobbies. But Gowers was a diligent and skilful etcher, devoting much of his holiday time to this art. His work, some of which has been exhibited at the Royal Academy, is characterised by artistic feeling as well as by technical skill. He was also much interested in mosses, and his knowledge of them was extensive and minute. Indeed, it may be said that all aspects of nature held a strong appeal for him. The beauties of nature were a constant joy to him, and it is interesting to know that from early days he was a devoted admirer of Ruskin and a constant student of his works. He was an enthusiastic advocate of the use of shorthand, and himself an excellent stenographer, using shorthand for all his notes both of hospital and private patients.

Sir William Gowers married the daughter of Mr. Frederick Baines, of Leeds. She died in 1913, leaving four children—two sons and two daughters. It may be mentioned without impertinence that Sir William Gowers was peculiarly happy in his married life and a devoted husband and father.

JAMES MILLEN MOORE, L.R.C.P. & S. EDIN.—Great regret has been caused in Lurgan and the surrounding district by the sudden death on April 25th, at his residence in Lurgan, of a well-known practitioner, Mr. J. M. Moore. Mr. Moore, who was 68 years of age, had attended service in the parish church of Lurgan in the morning, but later in the day, while walking in his garden, he was suddenly taken ill. Making his way to his house, he was in the act of drinking a glass of water when he fell to the floor and died in a few minutes from cardiac failure, in the presence of two of his medical friends, who had been hastily summoned. A native of Dungiven, co. Londonderry, where his father and several of his brothers practised, he studied at Foyle College, Londonderry, and at Queen's College, Belfast, and in 1868 he became L.R.C.P. & S. of Edinburgh. After assisting his father for a time, Mr. Moore settled in Lurgan, where he built up a large working-class practice. He also took a prominent part in the business and educational affairs of Lurgan. He is survived by an only son, his wife having pre-deceased him some years ago.

DEATH OF LIEUTENANT-COLONEL ROBERT MARK BRADFORD, A.M.S. (RETIRED).—Lieutenant-Colonel R. M. Bradford died recently at his residence, Bradford Peverell, near Dorchester. He was the son of the late Rev. J. Bradford, formerly vicar of Pinhoe, Devon, and received his medical education at St. Bartholomew's Hospital. He qualified as L.R.C.P. Edin. and M.R.C.S. Eng. in 1868, and shortly afterwards entered the Army Medical Service. On his retirement he took up his residence at Bradford Peverell, where he was highly esteemed. He was on the committee of the Dorset County Hospital and was secretary of the Dorset Orchestral Association.

DEATH OF PROFESSOR G. HEINRICIUS.—Professor Heinricius, who held the chair of midwifery and diseases of children in the University of Helsingfors, died recently, at the age of 62 years.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

THE Fund has received in the last fortnight some large additions; these, however, have not been the result of recent subscriptions, but represent the paying to the treasurer of money collected over a considerable range of time by local funds. A splendid donation from the Canadian Committee brings the contributions from this source to nearly £1500.

The money in the hands of the Executive Committee is sufficient for immediate wants, as will have been gathered from the weekly reports in the medical and pharmaceutical press, but it is most important to understand that the calls upon the Fund in the future will be heavy.

THE LIVERPOOL FUND.

At a recent meeting of the committee formed under the auspices of the Liverpool Medical Institution it was resolved to remit £400 to the treasurer, Dr. H. A. Des Vœux. The Liverpool Fund still remains open, and attention may be drawn here to the fact that a considerable number of the medical profession in Liverpool and district, as well as of the members of the Liverpool Medical Institution, have not yet sent in their subscriptions. These will be gratefully welcomed by the local honorary treasurer, Dr. T. R. Bradshaw. The following list is the third; the first and second were published in THE LANCET of Jan. 23rd and Feb. 13th respectively.

	£	s.	d.
T. P. Cowen, Rainhill ...	4	4	0
Charles J. Macalister ...	3	3	0
J. P. Bligh	2	2	0
W. McIntyre Brown, West Kirby	2	2	0
W. E. Livsey	2	2	0
Robert Stevenson, Bootle	2	2	0
Wallasey Medical Society, per Dr. Seymour Davies	2	2	0
Anon	1	1	0
Percy Ashworth, Southport (2nd subscription)	1	1	0
G. T. Bogle	1	1	0
H. Haward Bywater ...	1	1	0
Mrs. H. Haward Bywater	1	1	0
A. Ross Carmichael ...	1	1	0
W. C. Costine	1	1	0

	£	s	d.
William Crooke, Liscard	1	1	0
Seymour Davies, Liscard	1	1	0
Walter Dawson	1	1	0
Percy Edwards	1	1	0
R. P. Edwards, Mold ...	1	1	0
J. H. Fardon, Birkenhead...	1	1	0
William Irvine	1	1	0
Henry Jones	1	1	0
Leslie Kingsford	1	1	0
W. McAfee, West Kirby	1	1	0
R. I. Richardson	1	1	0
F. W. Taylor, Blackburn	1	1	0
John Twiston Davies, Liscard	0	10	6
W. Howie	0	10	6
J. Leggate (second subscription)	0	10	6
F. G. McCaughey	0	10	6
S. Wilkinson	0	10	6

THE SCOTTISH FUND.

The third list of subscriptions to the Scottish Fund brings the total subscribed to £1113 18*s*. The first and second list of subscriptions were published in our issues of March 13th and April 10th respectively.

	£	s.	d.
Dr. N. Sydney-Williams, India	2	0	0
Dr. T. Burn-Murdoch	1	1	0
Dr. A. J. Ballantyne ...	1	1	0
Dr. Thos. McGregor ...	1	1	0
Dr. James Parker	5	5	0
Dr. A. White Cassie ...	1	1	0
Dr. Jas. W. Cook	1	1	0
Dr. John Rowan	3	3	0
Dr. Wm. Snodgrass ...	2	2	0
Dr. L. R. Gray	1	1	0
Per Dundee Branch of British Medical Association—			
Dr. Julia L. Pringle...	5	0	0
Dr. Emily C. Thomson	5	0	0
Dr. J. H. W. Laing (second donation) ...	2	2	0
Dr. J. K. Tulloch ...	5	0	0
Dr. G. A. Rorie	2	2	0
Dr. C. Shoon	1	1	0
Dr. M. F. Anderson ...	1	1	0
Dr. C. Kerr	3	3	0
Dr. D. N. Anton... ...	1	1	0
Dr. H. E. Fraser... ...	1	1	0
Dr. C. S. Young... ...	1	1	0
Dr. W. C. Anderson ...	1	1	0
Dr. J. M. Whyte ...	1	1	0
Dr. J. Crawford	1	1	0
Mr. R. P. Mathers ...	3	3	0
Dr. W. S. Malcolm ...	3	3	0
Mr. J. Anderson	2	2	0
Dr. A. B. Dalgetty ...	0	10	6
Dr. D. Laing, ...	1	1	0
Dr. J. A. Dewar... ...	1	1	0
Dr. J. Richardson ...	1	1	0
Dr. J. Ewan Taylor ...	1	0	0
Dr. W. E. Foggie ...	1	1	0
Dr. F. M. Milne... ...	1	1	0
Dr. C. R. Marshall ...	1	1	0
Dr. S. W. Smith... ...	1	1	[illegible]
Dr. R. Johnston... ...	2	2	0
Anonymous	0	10	6
Dr. James Watt, Ventnor	0	10	6
Dr. John Anderson ...	1	1	0
Dr. J. Isdale Greig ...	1	1	0
Dr. John McLaren	1	1	0
Association of School Medical Officers of Scotland (per Dr. Hunter), second contribution	5	5	0
West Lothian Local Medical Committee (per Dr. Hunter)... ...	3	3	0
Dr. J. J. Robertson ...	1	1	0
Dr. W. Oliphant Walker	1	1	0
Sister J. W. Watt, Royal Infirmary, Edinburgh.	1	0	0
Dundee and E. of Scotland Pharmaceutical Assoc., per Mr. Jas. Robertson	5	0	0
Mr. William Dow	1	1	0
Mr. R. G. Howat	1	1	0
Mr. S. G. Crowden ...	0	10	0
Miss E. Miller...	0	10	0
"An Assistant" (anonymous)	0	5	0
Mr. M. Hoppenstein ...	0	2	6

THE WEEK'S SUBSCRIPTIONS.

The subscriptions received by Dr. Des Vœux up to Tuesday evening last, in addition to those previously acknowledged, are as follows:—

	£	s.	d
Mr. J. P. Ellerington (La Pharmacie Française) (seventh donation, total £50)	5	0	0
Mr. A. W. Sanders... ...	1	0	0
Southern Branch B.M.A. (per Dr. James Green, Hon. Sec.) (sixth donation, total £61 4*s*. 6*d*.)—			
Dr. Chas. C. Jeffery	1	1	0
Dr. Archibald Leishman	1	1	0
Dr. J. G. Blackman ...	1	0	0
Dr. R. A. Weston ...	1	1	0
Dr. E. F. S. Green ...	1	0	0
Canadian Committee (per Dr. J. Gibb Wishart, Hon. Treas.), (fifth donation, total £1427 3*s*. 11*d*.)	500	0	0
United Hospitals Club (per Dr. J. R. Bosworth, Hon. Sec.) (second donation, total £50)	25	0	0
Dr. H. Clifton Hughes	1	0	0
"A Friend" (per H. C. H.)	1	0	0
Mr. R. Broadhead	0	10	6
Shropshire and Mid-Wales Branch, B.M.A. (per Dr. A. G. Mackenzie, Hon. Sec.) (eighth donation, total £46 14*s*.)—			
Dr. R. A. F. Exham ...	0	10	6
North of England Branch of Belgian Doctors' and Pharmacists' Relief Fund (per Dr. James Don and Mr. A. S. Perceval, Hon. Secs.) (tenth donation, total £369 18*s*. 6*d*.)—			
Dr. Munro	1	1	0
Part proceeds of Belgian Flag Day, given by the Women Workers at Wheatley Hill (per W. W. Jones)	18	18	6
Miss J. Phillips	0	5	0
Mr. H. R. Carson	0	5	0
Mr. F. W. Sadler	0	10	0
Orange Free State Pharmaceutical Society, Bloemfontein (per Mr. H. H. Greenwood, Hon. Sec.)	5	0	0
Australasian Pharmaceutical Conference (per the Agent-General), New South Wales	152	0	0
Holderness and Howdenshire Pharmacists' Association (per Mr. C. Morrow)...	1	0	0

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham-gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Ltd.

THE APPEAL FOR SURGICAL INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge the receipt of surgical instruments kindly contributed by the following donors since the publication of the last list:—

Miss C. W. Hyde, Southampton; Dr. C. W. Buckley, Brixton; Mr. A. Broomhall, Hull (per the Voluntary Aid Committee); and Mrs. C. J. Kayser, Fleet.

Medical News.

Royal College of Surgeons of England.—At the First Professional Examination for the Licence in Dental Surgery on April 29th and 30th the following candidates were approved in the undermentioned subjects :—

Mechanical Dentistry and Dental Metallurgy.—Leslie Douglas Crabb, Edward Tong Crosoer, Richard John Gustavus Handel, and John Herbert, Guy's Hospital; Frank Hiam, Royal Dental Hospital; William Trevor Johnson, Birmingham University; Clifford Andrew Loveluck, Philip Henry Marsh, and William Mercer, Guy's Hospital; Ernest George Parkinson, Manchester University; Herbert Alfred Potter, Royal Dental Hospital; Harold John Powell and Bertie Moorwood Tonkin, Guy's Hospital; and Frederick Charles Truman and Ernest Arthur West, Birmingham University.

Mechanical Dentistry.—Albert William Ewart Chapple, Manchester University; William Ashley Cooper, Birmingham University and Guy's Hospital; Alfred Innes Cox, Royal Dental Hospital; Edmund Percy Deverall, Jenkin Albert Evans, and George Frederick Faustmann, Guy's Hospital; William Grant Milton, Bristol University; Johann Lodewijk te Water Naudé, Royal Dental Hospital; Arthur Arnold Osman, Guy's Hospital; Robert Wolff, Royal Dental Hospital; Walter Reginald Wotton, Guy's Hospital; and Malcolm Wykes, Birmingham University.

Dental Metallurgy.—Douglas William Smale Adams, Guy's Hospital; Harold John Allen, National Dental Hospital; Hubert John Vere Raywood Allin, Birmingham University; William Blair Spence Andrew, Royal Dental Hospital; Victor Henry Ball, London Hospital; John Laurence Barber, Liverpool University; Cyril Arthur Duvall Bishop, Guy's Hospital; Hubert Bruckmann, Royal Dental Hospital; Alfred Joseph Chiappa, National Dental Hospital; Eric Norman Commander, Birmingham University; Bertram Poole Cousins, Guy's Hospital; Thomas John Davies, London Hospital; Harold James Dawes, B.A. Cantab., Birmingham University; Pieter Jacob Stephanus de Wet and Hyman Fox, Guy's Hospital; Edwin Stowell Gawne, Liverpool University; Ralph Byron Gibson, Sheffield University; Lacy Norman Glaisby, Royal Dental Hospital; Edwin Spencer Goodwin and Philippus Elisa Grobbelaar, Guy's Hospital; Arthur Robert Hill, Royal Dental Hospital; John Christopher Johnson, Hugh Llywelyn Jones, Roy Victor Kingham, and Felix Reginald Knowler, Guy's Hospital; Frank Lawrence, London Hospital; John Leslie Lean, Guy's Hospital; Georges Maes, Brussels and Royal Dental Hospital; Harihar Gangadhar Moghe, L.M.S. Bombay, Bombay and National Dental Hospital; Edward Alfred Penney Parker, Guy's Hospital; Withiel Herbert Leslie Phillips, Birmingham University; Richard Stanislaus Roche and Ernest Findlay Shaw, Guy's Hospital; Cyril Fryer Smith, Liverpool University; and Herbert Victor Vogt, Albert Weinberg, George Wilshere, Thomas Alexander Moffat Wilson, D.M.D. Harvard, and William Adam Woodward, Guy's Hospital.

Apothecaries' Hall of Ireland.—The next examination for candidates seeking the licence in medicine, surgery, midwifery, and pharmacy will begin as follows :—Primary Examination, Monday, June 7th; Intermediate, Part I., Monday, June 14th; Intermediate, Part II., Monday, June 21st; and Final Examination, Monday, June 28th.

Bristol Children's Hospital.—The annual meeting of the Ladies' Auxiliary in connexion with this hospital was held recently under the presidency of the Duchess of Beaufort. The report showed that during 1914 38,000 houses had been canvassed, with the result that the sum of £1023 was raised for the funds of the institution. This is the largest amount collected in any year by the Ladies' Auxiliary.

Pharmacists and the Medical Curriculum.—The secretary of the Pharmaceutical Society has written to the Registrar of the General Medical Council to inquire whether, in view of the shortage of medical men, the Council would be prepared to consider favourably the suggestion that duly qualified pharmacists who desire to enter upon the medical curriculum might be excused the medical preliminary examination and such parts of the qualifying examination as are included in the subjects which the pharmacist has to pass in order to qualify under the Pharmacy Acts.

Leicester Royal Infirmary.—The number of in-patients received by this hospital, as shown by the 142nd annual report for the year 1914, was greater than that recorded in any previous year—namely, 4003. The average number of beds occupied during the year was 250·9. The total number of attendances in the out-patient department was 35,091, made up of 10,910 new cases, 22,034 old cases, and 2147 cases remaining on the books on Jan. 1st. It is satisfactory to note that the income has about equalled the expenditure, while the whole of the sources of income have been well maintained. For the building and equipment of a new pathological department a sum of £1800 has been promised, leaving a sum of £2400 to be obtained. With reference to the reconstruction of the Children's Hospital, which has resulted in the improved health both of patients and nurses, it is pointed out that a debt of £2200 remains to be liquidated, and the board hope that the hospital may be placed on the list of all subscribers to the infirmary for annual subscriptions and contributions.

The annual general meeting of the Asylum Workers' Association will be held at 11, Chandos-street, Cavendish-square, W., on Wednesday next, May 19th. The chair will be taken at 3 p.m. by Sir John Jardine, K.C.I.E., M.P., LL.D., president of the association. The annual report will be submitted, officers elected, and presentations will be made of medals for long and meritorious nursing service. Matters of much importance to asylum workers will be discussed, and it is hoped that there will be a large and representative gathering of members and friends of the association. All communications should be made to Dr. G. E. Shuttleworth, honorary secretary, or Mr. J. F. Powell, acting honorary secretary, at 8, Lancaster-place, Hampstead.

Royal Mineral Water Hospital, Bath.—The annual meeting of the subscribers to this hospital was held recently. The medical report was satisfactory, and the financial statement showed a deficit remained at the end of 1914 of £427. It is proposed to improve the accommodation of the institution and to provide radiant and other baths at an estimated cost of about £3000. Sir William Osler was elected a governor of the hospital.

Convalescent Home for Children, Weston-super-Mare.—The twenty-first annual meeting of the subscribers to this home at Weston-super-Mare, in connexion with the Bristol Children's Hospital, was held on May 5th. The medical report stated that during the year 285 boys and girls had been admitted; of these, 204 were cured, 60 much improved, 12 improved, and 4 had not improved, and 3 were transferred to the statutory hospital. The financial statement showed the expenditure exceeded the income by £89, and this sum had been met by the Bristol Children's Hospital.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Government and the Drink Problem.

The Government have decided to abandon their proposals to impose additional taxation on beer, wine, and spirits. What they are now asking Parliament to do is to enact the compulsory bonding of whisky and most other spirits for a period of three years. For one year, in order to permit the trade to adapt itself to the new conditions, the withdrawal of spirits ranging from two to three years of age is to be permitted, but a surtax of 1*s.* a gallon will be enforced in this case. Rum and gin, which usually pass into consumption without detention for the purposes of being matured, are still to be allowed to escape compulsory bonding, but they are to be subject to an additional tax in order that they may not be placed at an advantage in regard to other spirits. The Government are proceeding with their Bill to invest them with special powers to control the licensed trade in munition areas.

Army Medical Service.

Some objection was taken in the House of Commons to the proposal in the Army Act (Amendment) Bill which allows a general officer commanding to transfer men from one branch of the military medical service, including the Army Medical Service, to another branch. An amendment was moved with the object of preventing the transfer of men from the Army Medical Service to a combatant unit. The argument was that it was unfair to utilise men who had enlisted on the understanding that they were not to be employed as combatants for the purpose of actual fighting. It was explained that the provision applied only to men, not to officers. Mr. Tennant, the Under Secretary for War, said that where there were sufficient men and circumstances demanded their transfer it ought to be in the hands of the general officer commanding to make the transfer. He intimated that the Director-General of the Medical Service concurred in this view. The amendment was negatived without a division.

Milk and Dairies (Consolidation) Bill.

Mr. Herbert Lewis, the Parliamentary Secretary to the Local Government Board, has presented a Bill in the House of Commons "to consolidate certain enactments relating to milk and dairies." It has been read a first time.

HOUSE OF COMMONS.

WEDNESDAY, MAY 5TH.

Anti-inoculation Literature.

Mr. RONALD MCNEILL asked the Under Secretary for War whether he was prepared to take proceedings under the Defence of the Realm Act against persons attempting, by the distribution of literature or otherwise, to incite soldiers to endanger their own and their comrades' lives by refusing to undergo antityphoid inoculation.—Mr. TENNANT replied: The very satisfactory results which have been obtained by the combined efforts of officers of all ranks, both medical and regimental, as regards inoculation render it unnecessary to consider the question of taking proceedings under the Defence of the Realm Act.

Consultant Surgeons for the Navy.

Commander BELLAIRS asked the Secretary to the Treasury whether the amounts of £5000 a year paid to the six consultant surgeons now specially employed by the Admiralty came before the Treasury before the war broke out, the arrangement to employ them having been sanctioned in 1908. —Mr. ACLAND said in reply: No, sir, the salary was not submitted to the Treasury until the appointments were made. The Treasury gave general approval for the engagement of distinguished surgeons to look after sailors and other naval ratings who might be in need of their help. The scheme for doing this was proposed to the Treasury and sanctioned in principle in 1908, but the amounts intended to be paid were not at that time fixed.

Commander BELLAIRS: In view of the fact that no similar arrangement was made by the War Office, and the fact that the navy has not one-hundredth part of the casualties or the problems arising from casualties which the army has to face, will the Treasury take the fact into consideration and terminate this arrangement?—Mr. ACLAND: No, sir, the Treasury will not terminate this arrangement. It is surely of the utmost importance that our wounded men should have at their disposal the services of these extremely distinguished persons, and I cannot see my way to terminate this arrangement.

Commander BELLAIRS: Will the honourable Member take into consideration the fact that very distinguished surgeons and medical men are now serving in the army upon the pay of an ordinary colonel, and does he not see how undesirable it is that these comparisons should be drawn?—The DEPUTY SPEAKER: Order, order. That is a matter for debate.

Commander BELLAIRS asked the Secretary to the Admiralty whether, in view of the fact that there were so few casualties in the navy which had not been dealt with by the regular surgeons of the navy, he would consent to transfer the services of these six consultant surgeons to the War Office.—Mr. MACNAMARA answered: That is covered by a reply which has already been given.

Commander BELLAIRS: Is the right honourable gentleman aware that there are two gentlemen at the Admiralty, Fellows of the Royal College of Surgeons, who are doing nothing but clerical work? Will he consent to give a return of the number of operations performed by these gentlemen and the number performed by surgeons at the regular hospitals?

The DEPUTY SPEAKER: That is rather a subject for debate.

Commander BELLAIRS: I will put a question down.

Nitric Acid Fumes.

Mr. ROWLANDS asked the Home Secretary whether his attention had been called to the inquest held at Dartford on April 29th into the death of a workman while employed in some gun-cotton works, from the effects of nitric acid fumes; whether he had had a report of the case; and whether the precautions taken were such as to prevent a recurrence.—Mr. MCKENNA replied: I have received a report from the medical inspector of factories who investigated the case and attended the inquest. It appears that the workman had full opportunity of escaping from the fumes, but was unaware of their dangerous nature. The inspector has recommended the issue of instructions to the workmen and certain other precautions which should prevent a recurrence of any similar accident, and the firm has undertaken to adopt the necessary precautions. The matter will be carefully watched.

THURSDAY, MAY 6TH.

Civilian Medical Men and the War Office.

Mr. JOYNSON-HICKS asked the Under Secretary for War whether any civilian doctors were employed by the army at salaries of upwards of £3000 per annum; if so, who were they and what were they paid; and how many civilian doctors were receiving rates of pay higher than doctors of corresponding rank in the Royal Army Medical Corps.—Mr. TENNANT answered: There are no civilian medical men receiving higher rates of pay than officers of corresponding rank in the Royal Army Medical Corps and the Army Medical Service.

Commander BELLAIRS: Will not inconvenience arise from the fact that the Admiralty are paying four times as much as the Army?

The DEPUTY SPEAKER: I would remind the honourable member that this is not the time for argument.

Bangour Asylum.

Mr. HOGGE asked the Under Secretary for War whether Bangour Asylum was being converted into a military hospital, and, if so, what arrangements were being made so that the treatment of the present inmates was not interfered with.—Mr. TENNANT answered: Yes, sir, Bangour Asylum is being converted into a military hospital. I should be glad if my honourable friend would address the second part of the question to the Secretary for Scotland.

Exhaustion and Nerve Shock in the Army.

Colonel WHITE asked the Under Secretary for War whether arrangements had now been made whereby men, and more especially non-commissioned officers, who had been serving in the firing line for many months, and who were suffering from exhaustion and nerve shock, might be granted furloughs of six weeks to two months in cases where the reserve units of their regiments could supply the deficiency so caused.—Mr. TENNANT said in reply: All non-commissioned officers and men who in the opinion of the medical authorities are suffering from exhaustion and nervous shock and require rest are sent home until they are recovered.

Artificial Limbs for Wounded Soldiers.

Replying to Mr. PARTINGTON, Mr. TENNANT said: Arrangements have been in existence for many years whereby a soldier who has, while serving, lost a limb in consequence of disease or injury, is provided with an artificial limb at the public expense. The Commissioners of the Royal Hospital, Chelsea, arrange for the supply of artificial limbs to such soldiers.

Asphyxiating Gases.

Colonel WHITE asked the Under Secretary for War whether protective helmets or masks against asphyxiating gas had actually been issued to the troops at the front.—Mr. TENNANT replied: When the Germans first introduced gas as a weapon of warfare we sent out 1,000,000 respirators, which were supplied to us originally from the Admiralty. These respirators were not found to be so efficacious as we desired, and they were supplemented by another form of respirator, the cotton waste, which was saturated with a solution of carbonate of soda and hyposulphite of soda, being held in place by a veil. That is now being used by the troops. The question has arisen whether it would not be preferable to have a helmet such as is used by fishermen, which is made of woollen material with talc spaces for the eyes, the cotton waste inside being saturated with the same solution. Dr. Haldane has again gone to the front to conduct experiments with these various materials and methods.

The Duty on Medicinal Alcohol.

Mr. HORNER asked the Chancellor of the Exchequer whether, having regard to the fact that ethyl-alcohol, upon which duty was payable, was essential in the manufacture of many medicines used in both human and veterinary practice, the Government would allow a rebate to be granted to the manufacturers or other means adopted by which this duty would not become a tax upon the alcohol used in their preparation, seeing that otherwise the imposition of the contemplated duties would largely increase the cost of these medicines to all users, and thus press with excessive severity upon the poor and add enormously to the expenses of hospitals and charitable institutions.—Mr. LLOYD GEORGE answered: The whole question is under consideration.

International Opium Conference.

Sir J. D. REES asked the Secretary of State for Foreign Affairs whether any and, if so, what action was to be taken upon the correspondence respecting the Third International Opium Conference; whether it was proposed to pursue this matter further during the continuance of the war; and, if not, with what object the report of the British delegates was to be presented to Parliament as soon as the *protocol de clôture* was officially received from the Netherlands Government.—Sir EDWARD GREY replied: No further action has been taken beyond depositing the ratification of the signature of the British delegates, nor is it practicable to take any further action at present. The correspondence respecting the third conference, including the report of the British delegates and the *protocol de clôture*, was laid before the House in February last in accordance with an undertaking given in the House with the object of making all the available information accessible to those members and the general public who are interested in this question.

TUESDAY, MAY 11TH.

Release of Medical Personnel.

Lord ROBERT CECIL asked the Secretary of State for Foreign Affairs what progress had been made for the release of medical personnel detained in the various belligerent countries.—Sir Edward Grey replied: As will be seen from White Paper No. 8 (Miscellaneous) His Majesty's Government accepted in its main outline the interpretation placed by the German Government on the provisions of the Geneva Convention dealing with the release of medical personnel, with the reservation that such personnel should not be detained in connexion with new work. The German Government pointed out that there were certain epidemics amongst the prisoners in German detention camps which require expert assistance. This referred principally to typhus, which had broken out amongst Russian prisoners, and in which disease Russian doctors were more expert than German doctors. On further consideration, His Majesty's Government decided that circumstances, such as the outbreak of obscure epidemics among prisoners, might arise in which the captors might be justified by humane considerations in retaining medical personnel who are thoroughly competent to deal with the disease for a period longer than that which is ordinarily permissible. A note to this effect was addressed to the United States Ambassador on April 30th, and an answer has not yet been received.

Medical Consultants to the Navy.

Commander Bellairs asked the Secretary to the Admiralty whether the highest medical rank in the Navy was that of surgeon-general at a full-pay rate of £1300 per annum, and, if so, whether this fact was taken into full consideration when the arrangement was made to remunerate consultants for short duty at the rate of £5000 per annum.—Mr. Macnamara replied: A surgeon-general of the Navy when employed at any of our naval hospitals draws a salary of £1300 and charge pay at the rate of £182 10*s.* per annum. He is also in the occupation of a house valued at £70 per annum. All the facts bearing on the question were taken into consideration when deciding on the remuneration to be paid to consultants.

Mr. James Hope asked the Secretary to the Admiralty whether the number of civilian doctors now in the service of the Navy was in excess of the needs of that service; and whether he would sanction the transfer of a limited number of such doctors to the service of the army.—Mr. Macnamara replied: The answer to the first part of the question is in the negative. In these circumstances it would not be possible to adopt the suggestion contained in the second part. As regards the special consultants to whom reference has been made in an earlier question, if a specific request were made for help of one of them for any particular operation or for any special consultation, it would be certainly acceded to if it was possible; but the daily duty that has to be performed by these gentlemen in naval hospitals would not allow of the utilisation of their services by the army to a greater extent than this.

The Drug Fund.

Mr. Snowden asked the Chancellor of the Duchy of Lancaster whether he had received a resolution passed by the Insurance Committee for the borough of Blackburn appreciating the action proposed to be taken by the Insurance Commissioners respecting the deficits in the drug funds of the various overspent Insurance Committees for the year 1913, and expressing the desire that a Departmental Committee be appointed to inquire into the causes of and remedies for the continuing deficiencies in the Drug Fund in insurance areas, and for an amendment of Article 40 of the Medical Benefit Regulations; and whether it was intended to carry out these suggestions.—Mr. Montagu replied: The answer to the first part of the question is in the affirmative. In reply to the last part, the cost of the supply of drugs under the Insurance Act is already the subject of inquiry by a Departmental Committee which has been specially appointed for the purpose. Before considering any further action I am awaiting their report.

Salaries of Cork Panel Practitioners.

Mr. Crean asked the Chancellor of the Duchy of Lancaster whether he was aware that the salaries of the panel doctors of the city of Cork are now six months in arrear; whether the Insurance Commissioners in dealing with the county panel doctors paid only three months' salary about three months ago, six months' salary being then due; and whether he would have this state of things attended to immediately in the interest of the service.—Mr. Montagu said in reply: I am informed by the Irish Insurance Commissioners that further payments on account will be made to the doctors referred to both in the county borough and the county in a few days.

WEDNESDAY, MAY 12TH.

Consulting Surgeons with the Army.

Commander Bellairs asked the Financial Secretary to the War Office, in view of the fact that the Admiralty were paying six consultant physicians and surgeons serving on shore in Great Britain at a rate equal to 3·9 times the pay of the highest-salaried surgeon-generals of the navy, in addition to the earnings of a certain amount of private practice, whether any difficulties had thereby resulted in regard to the distinguished civil surgeons who so patriotically went to France at the ordinary rates of army pay.—Mr. H. Baker answered: No, sir. There have been no difficulties with regard to the pay and status of the consulting physicians and surgeons working with the army in France.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Anderson, A. W., M.D., C.M. Edin., has been appointed Medical Officer of the Stewartry Parish of Kirkgunzeon.

Barlow, Sir Thomas, M.D. Lond., F.R.S., has been elected to serve on the Senate of the University of London.

Bligh, J. A. Murray, M.D. Liverp., has been appointed Honorary Physician to the David Lewis Northern Hospital.

Dawson, J. Maxwell, M.D., C.M. Edin., D.P.H., has been appointed Medical Officer of Health for the Burgh of Buckhaven, and Medical Superintendent of the Cameron Hospital.

Harper, John Maurice, M.R.C.S., has been appointed temporary Medical Officer of Health for the Bath Rural District.

Judd, Charles F., M.B., B.Ch. Dubl., has been appointed Medical Officer for the Stillorgan Dispensary District.

Mitchell, T. C., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer of Health for the Wath Rural District.

Parsons, Leonard G., M.D. Lond., M.R.C.P., has been appointed Lecturer in Infant Hygiene and the Diseases Peculiar to Children in the University of Birmingham.

Wells, S. R., M.D. Lond., has been elected to serve on the Senate of the University of London.

Williamson, James, M.B., Ch.B., has been appointed an Honorary Ophthalmic Surgeon to the Bury Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

Alton, Hants, Lord Mayor Treloar Cripples' Hospital.—Two Assistant Resident Medical Officers. Salary as arranged, with board, residence, and laundry.

Birkenhead Borough Hospital.—Female Senior and Junior House Surgeons. Salary £180 and £150 per annum respectively, with board and laundry.

Birmingham General Dispensary.—Resident Medical Officer, unmarried. Salary £250 per annum, with apartments, attendance, &c.

Birmingham, Jaffray Branch of General Hospital, Gravelly Hill.—Resident Medical and Surgical Officer. Salary £150 per annum, with board, residence, and washing.

Birmingham and Midland Eye Hospital.—Senior House Surgeon Salary £110 per annum, with board, residence, and attendance.

Birmingham and Midland Hospital for Skin and Urinary Diseases.—Clinical Assistant for three months. Salary at rate of 52 guineas per annum. Also Clinical Assistant, for six months, to Electrical Department. Salary at rate of 52 guineas per annum.

Birmingham, Romsley Hill Sanatorium for Consumptives.—Assistant Resident Medical Officer, unmarried. Salary £250 per annum, with board, apartments, and laundry.

Bolingbroke Hospital, Wandsworth Common, S.W.—Resident Medical Officer. Salary £300 per annum. Also House Surgeon. Salary £100 per annum, with board-residence.

Bolton Infirmary and Dispensary.—Third House Surgeon. Salary £170 per annum, with apartments, board, and attendance.

Bournemouth, Royal Victoria and West Hants Hospital (Boscombe Branch).—House Surgeon for six months. Salary £100 per annum, with board, lodging, washing, &c.

Brighton Education Committee.—Temporary Junior School Doctor. Salary at rate of £350 per annum.

Bristol, Beaufort War Hospital.—Chief Resident Physician.

Bristol General Hospital.—Second House Physician, House Surgeon, Casualty House Surgeon, and Resident Obstetric Officer, all for six months. Salary at rate of £150 per annum, with board, residence, &c.

Bristol Royal Infirmary.—Throat, Nose, and Ear House Surgeon for six months. Salary at rate of £120 per annum, with board, apartments, and laundry.

Burnley Union Workhouse.—Resident Assistant Medical Officer or Locum Tenens. Salary £200 per annum, with apartments, rations, washing, and attendance.

Burnley, Victoria Hospital.—House Surgeon. Salary £135 per annum, with residence, board, and washing.

Bury Infirmary.—Senior and Junior House Surgeons. Salary £175 and £150 per annum respectively, with board, residence, and washing.

Buxton, Derbyshire, Devonshire Hospital.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

Carlisle Non-Provident Dispensary.—Resident Medical Officer. Salary £200 per annum, with apartments (not board).

Carmarthen, Joint Counties Asylum.—Temporary Second Assistant Medical Officer. Salary at rate of £200 per annum, with board, lodging, washing, &c.

Croydon Borough Hospital.—Senior Resident Medical Officer and Bacteriologist. Salary £200 per annum, with board, residence, and washing. Also Assistant Resident Medical Officer. Salary £150 per annum, with board, residence, and laundry.

DENBIGH, NORTH WALES COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary £220 per annum, with apartments, board, attendance, and washing.

DERBYSHIRE COUNTY COUNCIL.—Three School Medical Officers. Salary £400 per annum. Also Assistant in Sanatorium. Salary £250 per annum, with board, laundry, and lodging.

DERBY, MICKLEOVER COUNTY ASYLUM.—Medical Superintendent. Salary £550 per annum, with house, laundry, &c.

DUMFRIES, CRICHTON ROYAL.—Temporary Assistant Physician, unmarried. Salary at rate of 5 guineas a week, with apartments, board, laundry, and attendance.

ESSEX EDUCATION COMMITTEE.—Temporary Female School Medical Inspector. Salary £300 per annum.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—House Physician for six months. Salary at rate of £150 per annum, with board, apartments, and washing.

GRAVESEND HOSPITAL.—House Surgeon. Liberal salary, with board, residence, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway, N.—House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £150 per annum, with board, residence, and laundry.

HEMEL HEMPSTEAD, HERTS, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary to be a matter of arrangement. With rooms, board, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician for six months. Salary 30 guineas.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Surgeon, unmarried, for six months. Salary £50, with board, residence, &c.

HULL ROYAL INFIRMARY.—House Physician, unmarried. Salary £105 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging. Also Casualty House Surgeon. Salary at rate of £80, with board and lodging.

INDIAN MEDICAL SERVICE.—Ten Commissions.

IPSWICH BOROUGH MENTAL HOSPITAL.—Resident Medical Superintendent. Salary £400 per annum, with residence, washing, &c.

KING EDWARD VII. SANATORIUM, Midhurst, Sussex.—Second Assistant Medical Officer. Salary £150 per annum, with board, lodging, and attendance.

LEEDS GENERAL INFIRMARY.—Resident Casualty Officer. Salary £125 per annum, with board, residence, and laundry. Also Resident Aural Officer. Salary £100 per annum, with board, residence, and laundry.

LIVERPOOL, BROWNLOW HILL INSTITUTION.—Resident Assistant Medical Officer. Salary at rate of £300 per annum, with rations, &c.

LOCHGOILHEAD AND KILMORICH PARISH.—Medical Officer and Vaccinator. Salary £100 per annum.

LONDON SKIN HOSPITAL, 40, Fitzroy-square, W.—Honorary Assistant Physician or Assistant Surgeon.

MANCHESTER, ANCOATS HOSPITAL.—Two Residents.

MANCHESTER, COUNTY ASYLUM, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN. Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

MILE END OLD TOWN INFIRMARY.—Assistant Medical Officer. Salary £275 per annum, with board, lodging, and washing.

NEWARK BOROUGH AND RURAL DISTRICT.—Medical Officer of Health, who would also be appointed School Medical Officer for the Borough, Medical Officer in charge of Isolation Hospital, and Medical Officer to the Borough Police. Salary £430 per annum.

NORTHUMBERLAND COUNTY COUNCIL.—Temporary Tuberculosis Officer. Salary 7 guineas a week.

NOTTINGHAM CHILDREN'S HOSPITAL.—Female House Surgeon. Salary at rate of £150 per annum, with apartments, board, and washing.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon. Salary at rate of £250 per annum, with board, residence, and laundry.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Surgeon. Salary £120 per annum, with board, residence, and washing.

PORTSMOUTH CORPORATION MENTAL HOSPITAL.—Assistant Medical Officer. Salary £250 per annum, with board, apartments, attendance, and washing.

PORTSMOUTH ROYAL HOSPITAL.—House Surgeon for six months. Salary £150 per annum, with board, &c.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Physician and House Surgeon for six months. Salary £100 per annum, with board, residence, and washing. Also Assistant Physician.

ROTHERHAM HOSPITAL.—Senior and Junior House Surgeons. Salary £200 and £125 per annum respectively, with board, lodgings, and washing.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Hunterian Professors and the Arris and Gale Lecturer.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, W.—Resident Medical Officer.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Resident Medical Officer and Assistant Resident Medical Officer. Salary at rate of £110 and £90 per annum respectively, with board, residence, and laundry.

ST. PANCRAS DISPENSARY, 39, Oakley-square, N.W.—Resident Medical Officer, unmarried. Salary £300 per annum, with residence and attendance.

SALISBURY GENERAL INFIRMARY.—House Surgeon and Assistant House Surgeon, unmarried. Salary £100 and £75 per annum respectively, with apartments, board, lodging, and washing.

SCARBOROUGH BOROUGH.—Temporary Medical Officer of Health. Salary at rate of £400 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House Surgeons. Salary £100 and £80 per annum respectively, with board, residence, &c.

SHEFFIELD ROYAL INFIRMARY.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.

SHEFFIELD, WHARNCLIFFE WAR HOSPITAL, Middlewood-road.—Resident Medical Officers.

SHREWSBURY, ROYAL SALOP INFIRMARY.—House Physician. Salary at rate of £110 per annum, with board and apartments.

SOMALILAND.—Medical Officer. Salary £400 per annum, with free quarters.

SOUTHAMPTON, PARISH INFIRMARY, Shirley Warren.—Resident Assistant Medical Officer. Salary £200 per annum, with apartments, rations, washing, and attendance.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Female House Surgeon. Salary £150 per annum, with residence, board, and washing.

STEPNEY TUBERCULOSIS DISPENSARY.—Medical Officer. Salary £500 per annum.

SWANSEA EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary £300 per annum.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, &c.

VENTNOR, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST ON THE SEPARATE PRINCIPLE.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with board, lodging, &c.

WALSALL AND DISTRICT HOSPITAL.—Assistant House Surgeon and Anæsthetist. Salary £150 per annum, with board, residence, and laundry.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.

WEST BROMWICH AND DISTRICT HOSPITAL.—House Surgeon and Assistant House Surgeon, unmarried. Salary £150 and £120 per annum respectively, with residence, board, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—House Physicians. Salary £120 and £100 per annum, with board, residence, and washing.

WEST HAM UNION.—Fourth Female Assistant Medical Officer at Infirmary, Whipps Cross-road, Leytonstone, N.E. Salary £160 per annum. Also Female Assistant Medical Officer at Workhouse, Union-road, Leytonstone, N.E. Salary £140 per annum. Each with usual residential allowances.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £150 per annum, with board, apartments, and washing.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Female Resident Medical Officer for six months. Salary at rate of £150 per annum, with board, rooms, and laundry.

WORCESTER COUNTY AND CITY ASYLUM.—Assistant Medical Officer. Salary £250 per annum, all found.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary £150 per annum, with board, residence, and washing.

WOUNDED ALLIES RELIEF COMMITTEE, Sardinia House, Kingsway.—Medical Men to proceed to Montenegro to combat Typhus Epidemic.

Births, Marriages, and Deaths.

BIRTHS.

BROADBENT.—On May 7th, at Muswell-rise, Muswell-hill, N., to Dr. and Mrs. Reginald Broadbent. a daughter.

BROMLEY.—On May 7th, at The Warden's House, Guy's Hospital, the wife of Lancelot Bromley, M.C., F.R.C.S., of a daughter.

GASKELL.—On May 10th, at the Royal Naval College, Greenwich, the wife of Fleet-Surgeon Arthur Gaskell, R.N., of a son.

MACGLASHAN.—On May 4th, at Hartley-hill, Leeds, the wife of Dr. Keith B. MacGlashan, of a daughter.

SEYMOUR.—On May 7th, at Rosslyn-hill, Hampstead, the wife of Dr. E. A. Seymour, of a son.

SMITH.—On May 2nd, at the Taunton Nursing Home, Taunton, the wife of Lieutenant C. E. H. Smith, R.A.M.C., of a son.

SOWRY.—On May 6th, at Newcastle, Staffs, the wife of George H. Sowry, M.D., F.R.C.S., of a son.

TURNER.—On May 8th, at Anerley-road, Upper Norwood, the wife of Captain A. Scott Turner, R.A.M.C., of a daughter.

MARRIAGES.

BREMNER—LILLICO.—On May 8th, at the Parish Church, Croydon, Lieutenant-Colonel James Morrison Gardiner Bremner, M.B., to Kathleen, second daughter of Alderman William Lillico, J.P., Coombe Hill House, Croydon.

LUKYN-WILLIAMS—MACDONALD.—On May 5th, at Guilden Morden Parish Church, Herbert Temple Lukyn-Williams, M.B., Lieutenant, R.A.M.C., to Matilda Kate, daughter of the late Rev. C. J. MacDonald, B.A.

MAWSON—O'FARRELL.—On April 28th, at the Catholic Church, Haddington-road, Dublin, Dr. Owen Mawson, to Ellen, eldest daughter of Surgeon-General O'Farrell.

DEATHS.

BAILLIE.—On May 3rd, at The Larches, Tiverton, Peter Baillie, M.D. Edin., formerly of Whitworth, Lancashire.

JEFFERSON.—On May 4th, at West-street, Rochdale, Arthur John Jefferson, M.D. Lond., aged 59 years.

LOCKER.—On May 7th, at Kirby Cross, Essex, Edward Hawke Locker, M.R.C.S., L.R.C.P., late Surgeon R.A.M.C., aged 57 years.

MASON.—On May 7th, at Waxham Cottage, Gorleston, Alfred Leighton Mason, L.D.S. Eng., aged 34 years.

STIVENS.—On May 9th, at Park-street, Grosvenor-square, W., Bertram Herbert Lyne Stivens, M.D., of Garlogs, Stockbridge, Hants, in his 60th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

WINKLES.

IN the appeal of Leavett *v.* Clark heard by the Divisional Court recently, the appellant had been convicted under the Larceny Act, 1861, of which Section 24 imposes a penalty upon a person taking "fish" in any water which is private property or in which there is a private right of fishery. In this instance the defendant was picking up winkles upon certain mud flats, gathering some which had been left dry by the tide and others which were still in the water. The magistrates had decided that a winkle was a fish, and the Divisional Court was asked to hold that it was not and declined to do so. The difficulty arose out of the Act in question giving no definition of the word "fish," as to which the legislature seems to have been equally silent on other occasions. Counsel contended that a "fish" must be vertebrate and that the Act was designed to protect the ownership of something capable of being taken by angling. The principal case referred to was that of Caygill *v.* Thwaite, decided 30 years ago by a court consisting of Mr. Justice Mathew and Mr. Justice A. L. Smith, both of whom, it will be remembered, sat later in their lives in the Court of Appeal. In Caygill *v.* Thwaite the point was whether a "crayfish" was a fish. The name, of course, indicates nothing, as crayfish is a corruption of "écrevisse," and Mr. Justice Mathew, as Lord Reading pointed out in his judgment in Leavett *v.* Clark, could only say, "It is, perhaps, difficult to give any definite reason except that crayfish are fish." The Lord Chief Justice, Mr. Justice Avory, and Mr. Justice Low appear to have found scarcely better grounds for their decision, which was to follow Caygill *v.* Thwaite, as it had been so long held to be good law. The last-named judge is reported to have observed that he "saw no reason why a winkle should not be a fish." It may be suggested that some day definition should prevent the possibility of a man, who might honestly not know that he was doing wrong, being convicted as a fish poacher by establishing the true position of the "fractious penny winkle" and other molluscs.

WORK OF SCHOOLS FOR MOTHERS IN EDINBURGH.

IN the provincial Training College at Edinburgh a lecture was delivered recently under the auspices of the Edinburgh Child Study Association, entitled "Schools for Mothers as Centres for Social and Educational Work," by Miss E. V. Eckhard, Manchester. The lecturer said new enterprises were usually initiated by private effort, and when the value of an enterprise had been fully proved the State stepped in and offered help. Schools for mothers had now passed the experimental stage, and the State was giving financial help in England. The aim was to educate the mother through the child.

Since Jan. 1st five infant health centres have been opened in various parts of Edinburgh. Nine baby consultations a week are held, with a doctor in attendance. In addition, the centres are opened five other afternoons for health classes for mothers and instruction in infant clothing and feeding.

THE INHALATION OF CHLOROFORM IN BRONCHIAL CATARRH.

To the Editor of THE LANCET.

SIR,—I read with much pleasure Dr. Alfred S. Gubb's letter in your issue of April 24th on the value of chloroform inhalation in cases of violent paroxysmal cough and in the cough in cases of phthisis. In the "sixties" Dr. Churchill, of this city, recommended whiffs of chloroform to cut short paroxysmal cough in pertussis and phthisis, and for the past 30 years I have prescribed it in such cases. I recommend five or ten drops to be inhaled from a piece of fine cotton-wool. I may add that I have also prescribed it in cases of paroxysmal cough in the early stages of measles, and in no single instance have I seen any unpleasant results.

Dr. Richard Pearson, physician to the General Hospital, near Birmingham, writing in 1795 ("Miscellaneous Observations on Certain Remedies Used in Consumption," R. Baldwin, No. 47, Paternoster-row, London), says that he has "found the *vapour of æther* remarkably serviceable in phthisical cases. Patients who have inhaled it two or three times find it so grateful to their feelings that they are disposed to have recourse to it too often." His mode of applying was as follows: "One or two tea-spoonfuls of æther to be poured into a tea-saucer, which is held up to the mouth, and the vapour arising from it is drawn in with the breath. The inhalation is continued till the saucer becomes dry."

We learn from "La Grande Chirurgie de Guy de Chauliac," of 1363, that Theodoric used the vapour of hot water impregnated with an extract prepared from hypnotics and analgesics, such as mandragora, hemlock, and opium, which was inhaled until sleep was induced. Theodoric or Teodorico was an Italian surgeon and ecclesiastic who rose to be Bishop of Cervia. He enjoyed a high reputation for his skill in surgery, and wrote, in Latin, a treatise "On Surgery according to the System of Hugo de Lucca." He died in 1298. I am, Sir, yours faithfully,

Dublin, April 26th, 1915. GEORGE FOY.

THE HOSPITAL ACCOMMODATION OF ENGLAND AND WALES.

Mr. Herbert Lewis, M.P., stated at Hemel Hempstead on May 6th that according to a Census by the Local Government Board the hospital accommodation of England and Wales is as follows:—

	Hospitals.	Beds.
General...	593	31,313
Special	222	13,654
Fever	755	31,149
Small-pox	362	7,946
Port Sanitary	30	418
Poor-law	700	94,001
Total	2662	178,481

COLONIAL VEGETABLE DRUGS.

THE current issue of the quarterly *Bulletin of the Imperial Institute* (Vol. XIII., No. 1) contains an interesting article, covering nearly 40 pages, on Investigations of Vegetable Drugs and Poisonous Plants made by the staff of the scientific and technical department of the Institute and by other investigators during recent years. The drugs examined include many which have a reputation among natives, and all the drugs have their source in the British possessions. Most of the "native drugs" are disappointing from the point of view of European medicine, but there are some notable exceptions, Podophyllum emodi, an Indian plant recognised in the British Pharmacopœia, being one of them. Other examples are the Egyptian plant Hyoscyamus muticus, a valuable source of the alkaloid atropine, the seeds of Peganum Harmala, which have long been used as an anthelmintic in the East, and the seeds of Croton Elliottianus, which Professor J. T. Cash, of Aberdeen University, and Mr. W. J. Dilling have found to be a useful laxative. A special article by Mr. W. R. Dunlop, of the Imperial Department of Agriculture for the West Indies, deals with the lime and lemon as sources of citric acid and essential oils. The *Bulletin* can be obtained from Mr. John Murray, Albemarle-street, W., price 2*s.* 6*d.* net.

"KHAKI": A TOPICAL MAGAZINE.

THE May number of *Khaki*, a magazine written for our sailors and soldiers, which is supplied gratis to them while on active service, contains, in addition to fiction, several articles of topical interest. Among the latter is the story of Turkey's influence in the East, with remarks on the probable site of the Garden of Eden. The magazine is published at Imperial House, Kingsway, London, W.C., at the price of 6*d.* net, and it deserves support, not only on account of its contents but also for the good work which the management of the journal is doing in helping British prisoners in Germany who have no relatives or friends.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 9.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 12th, 1915.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
May 6	29·920	S.	1·76	107	76	55	57	60	Hazy
,, 7	30·010	E.	...	116	74	53	57	59	Fine
,, 8	30·138	E.	...	114	73	54	55	61	Fine
,, 9	30·290	E.	...	107	60	44	49	53	Fine
,, 10	30·340	N.E.	...	109	66	42	48	52	Fine
,, 11	30·052	E.	...	108	69	46	49	56	Fine
,, 12	29·724	S.W.	...	112	69	54	54	56	Cloudy

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Papers:—Mr. H. Moore: On the Corpuscular Radiation liberated in Vapours by Homogeneous X Radiation (communicated by Prof. O. W. Richardson).—Mr. H. Richardson: The Absorption in Lead of γ Rays emitted by Radium B and Radium C (communicated by Sir E. Rutherford).—Mr. T. R. Merton: On the Application of Interference Methods to the Study of the Origin of Certain Spectrum Lines (communicated by Prof. A. Fowler).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY.

GENERAL MEETING OF FELLOWS: at 5 P.M. Ballot for the Election of Candidates to the Fellowship.

SECTION OF PSYCHIATRY (Hon. Secretaries—Bernard Hart, G. F. Barham): at 6 P.M.

Annual General Meeting.—Election of Officers and Council for Session 1915–1916.

WEDNESDAY.

SECTION OF THE HISTORY OF MEDICINE (Hon. Secretaries—Raymond Crawfurd, Leonard G. Guthrie): at 5 P.M.

Annual General Meeting.—Election of Officers and Council for Session 1915–1916.

Papers:

Dr. George C. Peachey: William Bromfield, Surgeon.
Dr. Charles Mercier: Paracelsus and Van Helmont.
Dr. Hector A. Colwell: Lionel Lockyer.

Exhibits:

Mr. Macleod Yearsley: Two Documents concerning Touching for the King's Evil.

THURSDAY.

SECTION OF DERMATOLOGY (Hon. Secretaries—S. E. Dore, A. M. H. Gray): at 5 P.M.

Exhibition of Cases (at 4.30 P.M.):

Annual General Meeting.—Election of Officers and Council for Session 1915–1916.

Dr. J. J. Pringle: Pemphigus Vegetans (shown before).
Dr. J. M. H. MacLeod: (1) Dermatitis Herpetiformis; (2) Chronic Pemphigus (?).
Dr. H. W. Barber: Lichen Planus Atrophicus in an Infant.
Dr. Parkes Weber: (1) Spurious Erythromelalgia: Non-syphilitic; (2) Arteritis Obliterans in a Jew.
Dr. D. Walsh: Pompholyx.
Dr. H. C. Semon: Mycetoma Pedis.

ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.

MONDAY.—8 P.M., Cantor Lecture:—Dr. D. Sommerville: Foodstuffs. (Lecture IV.)

ILLUMINATING ENGINEERING SOCIETY, House of the Royal Society of Arts, 18, John-street, Adelphi, W.C.

TUESDAY.—8.15 P.M., Discussion on Some Points in Connexion with the Lighting of Rifle Ranges.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.

FRIDAY.—8.30 P.M., Papers:—An Epidemic of African Tick Fever among the Troops in British Somaliland.—American Leishmaniasis.—Treatment of Bilharziasis by Thymo-Benzol.—Treatment of Ankylostomiasis by Milk of Higueron.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M. Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

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Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

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Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

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The Hunterian Lecture

ON

SOME INFECTIONS OF THE TONSILS.

Delivered before the Royal College of Surgeons of England on Feb. 19th, 1915,

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(*Concluded from p. 1012.*)

STREPTOCOCCUS INFECTIONS.

THIS constant inhabitant of the mouth, fauces, and tonsils may live in apparent harmony with the individual during the whole course of his life. At times it causes serious lesions, and is perhaps the most important pathogenic organism in the tonsil. There is no doubt that several varieties are present; these differ in their morphology and cultural reactions and in their virulence and effect on inoculation. They are one of the commonest sources of acute infection, causing catarrhal inflammation, lacunar tonsillitis, tonsillar and peritonsillar inflammation, and suppuration. They not infrequently cause cervical bubo and suppuration, while they may cause septicæmia or endocarditis after their entry into the blood.

In addition to these acute manifestations, which are accompanied by fever and general illness, their effects may be more subtle. After an acute attack or even without it the tonsils may become permanently infected and be subject to recurring attacks of mild inflammation on the least provocation, not only during childhood or adolescence, but even well into adult life. It is probable that hypertrophy in childhood is due in part to the presence of these organisms. After infection, although no active signs be present in the tonsil, a continuous mild infection may be proceeding, as shown by a slight enlargement of the tonsillar lymph glands, general ill-health, and that type of anæmia due to the hæmolytic properties of the streptococcus poison. The tonsils may show all stages from mild inflammation to suppuration; they may hypertrophy or become in the final stages a shrunken fibrous body, containing débris in the lacunæ and being adherent to the pharyngeal wall. These manifestations of streptococcus tonsillitis are well recognised.

Rheumatism.

Perhaps one of the most important streptococcic infections is that modified variety which is associated with the production of rheumatism, and it is to this form that I shall devote most time.

The association of tonsillitis and rheumatism has been so well known and long established that the term rheumatic sore-throat has passed into general acceptance. Tonsillitis so often preceded an attack of acute rheumatism that the tonsil was suspected of being the possible entrance of some organism. It is chiefly owing to the work of Poynton and Paine that the various manifestations of this disease have been collected together into a homogeneous whole, and they have shown that this infection may manifest itself in almost any tissue or organ of the body. The investigations of Poynton and Paine on the organism they consider the cause of rheumatism, and the later and additional work of Beattie, Dixon, Walker, and others have shown that the organism found in acute rheumatism, although appearing in the lesion as a diplococcus, on cultural examination grows in chains and belongs to the streptococcus group. The evidence that this organism is the chief causative agent in the production of acute rheumatism is accumulating, and its acceptance amongst the profession is increasing.

The evidence that the tonsil is one of the chief sources of the organism is as follows. Rheumatic fever is often preceded by an attack of tonsillitis, and recurrence of the lesions may be preceded also by tonsillitis. The presence of the streptococcus of the rheumatic type in the tonsil has been experimentally proved. The tonsil can be found affected in most cases of rheumatism, and lesions can be found there in persons dying of endocarditis, acute or chronic. The original case of Poynton and Paine was that of a patient with chronic endocarditis. Following an attack of tonsillitis organisms were isolated from the tonsil showing the usual characters of their organism. On inoculation into a rabbit endocarditis was produced. These experiments have been so often performed by Poynton and Paine, all Koch's postulates being fulfilled, that the chain of evidence of this organism being the one concerned in the production of rheumatism seems complete.

A series of experiments of Beattie and Yates are important in this connexion. (Table VII.) Material from various lesions in the joints, throat, and blood was examined in 192 cases, rheumatic and otherwise, for streptococci. The organism was obtained in 48. Of these cases, 7 presented a definite disease and have no relation to the present question. Of the remaining 41 cases there was a rheumatic history in 31. The organism from these in 19 cases, or 61 per cent., on inoculation produced typical lesions in rabbits, these lesions being characterised by acute non-suppurative synovitis. Of the 11 negative results in rheumatic cases, 8 were from the tonsils. In each of these cases a single colony was subcultured, and there being many varieties of streptococcus present in the tonsil it may be presumed that a non-virulent form was obtained. If 2 additional cases, presumably rheumatic, are included, the positive results reach 70 per cent. in these cases, while in the non-rheumatic cases typical arthritis was not produced

TABLE VII.—*Inoculation Results (Beattie and Yates).*

Rheumatic Cases.

Number of experiments.	Source.	Arthritis.	Septicæmia.	No effect.
8	Synovial membrane	5	0	3
15	Throats	7	0	8
3	Blood	3	0	0
1	Cerebro-spinal fluid	1	0	0
1	Pyorrhœa alveolaris	1	0	0
3	Heart valve (vegetations) ...	2	1	0
	Non-rheumatic Cases.			
6	Synovial membrane	1	5	0
1	Blood...	0	1	0
1	Appendix...	1	0	0
1	Subcutaneous abscess... ...	0	1	0
	Doubtful Cases (Tonsillitis without History).			
5	Tonsils	1	4	0

in a single instance. In the experiments with organisms obtained from the tonsils of those with a rheumatic history, 15 in number, a positive joint result was obtained in 7, or 47 per cent. Of inoculation from the tonsils where no history of rheumatism was obtained, 5 in number, septicæmia was produced in 4 animals and arthritis in 1, the latter being possibly of the rheumatic type.

Chorea.

It is interesting to note that a positive result was also obtained from the organism found in the cerebro-spinal fluid in a case of chorea. It has been shown that the organisms from the tonsils of rheumatic patients are capable of reproducing in animals acute synovitis and endocarditis. The same organism has been found in other lesions of rheumatism, especially chorea. The diplococcus rheumaticus has been isolated from 3 fatal cases of the condition by Poynton and Gordon Holmes, where it was found in the pia mater and endocardium. The histological characters of the brain lesion in these cases, together with the cultural findings, support the title given by these authors to this condition—namely, cerebral rheumatism.

Chorea of pregnancy is in the majority of cases probably identical with that of children. French and Hicks in an analysis of 29 cases found that 19 had a previous history of rheumatism, while 15 out of these 19 had suffered previously from chorea. In 3 fatal cases, which were associated with fever, endocarditis was found post mortem. Wall and Andrews in an analysis of 37 cases found a previous history of chorea in 23 cases; if to these be added other rheumatic manifestations 28 out of the 37 had suffered previously. They also quote Buist's figures, in which out of 266 cases of chorea during pregnancy 66 had previously suffered from chorea during childhood. In one case which I had the opportunity of examining the patient's attack of chorea during pregnancy followed an attack of tonsillitis, and I found the tonsils enlarged with evidence of absorption—enlargement of the tonsillar glands.

The relation of hypertrophied tonsils to Sydenham's chorea has been investigated clinically by Branson, who found that of a series of 75 children 21 per cent. had been operated on for enlarged tonsils and glands. Naso-pharyngeal lesions were present in 88 per cent. of these children with chorea, and 62 per cent. had enlarged tonsils or had been operated on for them. Showing the evidence of infection from their tonsils all these cases had enlargement of the corresponding lymphatic glands. In 1910 I advocated the removal of tonsils for chorea where infection was considered to be occurring from them. This measure has been attended with considerable success, and has shown that the tonsil is one of the chief sources of infection, but that others exist in the naso-pharyngeal region, one case being unaffected by the operation until a chronic suppurating ear was cured. The removal of the tonsil cannot be relied on with certainty to cure the condition at once, but presumably cuts off further infection, for as in other rheumatic lesions, particularly endocarditis, the organism may remain latent in the affected tissues for varying periods.

Chronic Arthritis and other Lesions.

There is also accumulating evidence that certain forms of chronic arthritis have a definite relationship to infection from the fore end of the alimentary canal, in which the tonsil takes a share. Poynton and Paine have produced changes in the joints in rabbits by their diplococcus undistinguishable from rheumatoid arthritis in man. Beattie and Yates have also produced chronic arthritis by means of an organism obtained from a case of tonsillitis. Reinoculation from this joint produced similar changes in a second series of animals. They have shown that relapses are due to the reactivity of organisms lying latent in the synovial membrane, which they have proved that they are able to do for periods varying from a week to a year. Whatever other causes may be found for rheumatoid arthritis there is no doubt a certain number are due to infection from oral sepsis, and infected tonsils form an important part of this lesion.

In addition to the above-mentioned situations to which these organisms may be carried by the blood stream—namely, the heart, pericardium, meninges, or joints—occasionally they may pass into the appendicular artery and infect the appendix vermiformis. In spite of the large amount of operative work carried out in the treatment of appendicitis the mode of infection is still obscure, although the frequency of a streptococcal infection has been abundantly demonstrated. In the majority of cases the organisms invade the lining membrane directly, but in other cases the infection arrives by the blood stream. Appendicitis has been produced experimentally for some time by inoculating the blood with various organisms. Acute tonsillitis and appendicitis may occur at the same time. Kelly mentions that in 91 cases of acute appendicitis at the Johns Hopkins Hospital 3 were preceded by acute tonsillitis by a few hours. Finney and Hamburger also mention 3 cases of associated appendicitis, tonsillitis, and rheumatism. Poynton and Paine mention a case of associated tonsillitis and appendicitis. From both lesions they cultivated a streptococcus with identical appearances. That from the throat on inoculation produced arthritis, while that from the appendix when inoculated into 6 rabbits produced 1 case of appendicitis. In another series of experiments with the diplococcus obtained from a rheumatic joint, out of 8 animals inoculated arthritis was produced in all, while appendicitis was produced in 2. In the complete series of 16 intravenous inoculations 3 cases of appendicitis were produced. This would seem to bear out the noted occasional relationship of rheumatism to appendicitis.

Amongst other rheumatic lesions may be mentioned acute neuritis, which I have observed following an attack of tonsillitis. After successive attacks, the nerve of Bell, the anterior tibial nerve, the descending branches of the third and fourth cervical nerves, and the musculo-cutaneous nerve of the arm were affected. In the three former limited paralysis followed, which recovered in the course of a year. One of the attacks occurred after incomplete removal of the tonsils. Since the septic stumps were removed three years ago there have been no further attacks.

The Tonsil as Site of Entry for Organisms.

The foregoing evidence points to the tonsil being one, if not the chief, site of entry for the rheumatic organism. Other factors undoubtedly are concerned. There is no characteristic size, shape, or appearance of the tonsils—any variety may be present. All cases, however, give evidence of disease. The tonsils are infected and the tonsillar glands enlarged. The signs may be those of acute tonsillitis, or the process may be a chronic one with an entire absence of fever or signs of active mischief in the tonsil itself.

With regard to treatment, prevention of tonsil infection is undoubtedly the most important. When the organ, however, is grossly diseased and causing glandular or systemic infection, and where its recovery has been shown impossible, it should be enucleated as a preventive against further infection. This removal should be carried out during some quiescent period both of any local inflammation or general infection.

PNEUMOCOCCUS.

It has been mentioned that the pneumococcus can frequently be found in the tonsils of apparently healthy persons. On occasion an invasion may occur leading to tonsillitis. The inflammation may be limited to the tonsils, or the pharynx may be involved in addition. The inflammation may be associated with the presence of a fibrinous exudate on the surface, while in other cases a deeper infection of the tonsil may result, leading to a tonsillar abscess. In some cases the lesion may be associated with a similar infection in the lungs. One case of note has come under my observation—a child with a large abscess situated in the region of the tonsillar gland. On evacuation of this abscess a pure culture of the pneumococcus was obtained. At the same time the tonsil on the affected side was found to be enlarged and a culture of the pneumococcus obtained from it. On the removal of the tonsil at a later date a small abscess was found in its substance from which a similar culture was obtained.

OTHER PYOGENIC ORGANISMS.

The remaining pyogenic organisms are capable of infecting the tonsil and causing lesions in it or in more distant parts. All the types of tonsillitis are produced, with infection and perhaps suppuration of the cervical lymph nodes. Systemic invasion occasionally occurs with the staphylococci and streptococci and leads to a blood infection of either septicæmic or pyæmic type. In these cases organisms may settle in one or more distant organ, and there is hardly a tissue or organ in the body in which an infective lesion has not been reported following an attack of tonsillitis. In some cases of acute osteitis the source of organisms may be traced to the tonsils, although the great preponderance of staphylococcal infections in these cases points to a dermic origin of the organisms, and this is found clinically to be the case.

Theisen reports a case of acute thyroiditis as following tonsillitis. Loeb reports 4 cases of nephritis from the same source, and although the evidence is not quite conclusive discussion on his cases resulted in 4 more examples being cited. Infections have also been recorded in the testicle, endocardium, lungs, and in the abdominal organs.

Purpura of varying degrees has been not uncommonly noted to follow tonsillitis. I have observed several such cases, one of which presented abdominal symptoms, associated in all probability with hæmorrhagic lesions in the intestine. Somewhat similar effects are produced in the throat by infection with the organisms of Vincent, the bacillus and spirillum. Here the effects may be limited to the tonsil or involve in addition the adjacent pharyngeal structures, lymphatic glands, or distant organs.

SPECIFIC FEVERS.

Time does not permit me more than to mention the relation of the tonsil to the specific fevers. It is well known that the diphtheria bacillus may be a harmless inhabitant of the tonsil, either the true or pseudo type. Its invasion may be limited to the tonsil, and here it produces the characteristic lesion. Once lodged in the recesses of the lacunæ it is often most difficult to get rid of, and may cause repeated attacks of the disease. I removed the tonsils from a patient three years ago, following three attacks of diphtheria within as many years. Diphtheria bacilli were found deep in the lacunæ, and so far no further attack has occurred. These patients carry about an infection not only a danger to themselves but to others, and the most effective way of curing the carrier, when the bacilli are shown to lodge in the tonsils, is to enucleate them. This is followed by a disappearance of organisms from the throat.

The bacillus of influenza has been repeatedly demonstrated in the tonsils both in the apparently healthy and in those suffering from the effects of influenza. It has also been shown that the infection of poliomyelitis may gain access through the tonsils. Tonsillitis may also be associated with the other specific fevers, especially measles and German measles.

The relation to scarlet fever is one of great importance. The attack is so often ushered in by tonsillitis that some causal relation between the two must be considered established. It is still a disputed point how far the streptococci found in the throat lesion and in the infective complications, such as middle-ear disease, cervical bubo, and arthritis or endocarditis, are responsible for the disease.

HYPERTROPHY OF THE TONSILS.

This brief review would be incomplete without some detailed reference to the subject of hypertrophied tonsils. The importance of the subject can be judged from the estimate of the Chief Medical Officer of the Board of Education, who states that of the six million children attending the Government schools 6–8 per cent. suffer from this condition to such a degree as to necessitate surgical treatment. This percentage of children with enlarged tonsils varies in different parts; usually it is higher than the figures above quoted. In London of 240,764 children examined 10 per cent. had hypertrophied tonsils.

It is important to define, if possible, at the outset the normal tonsil, and I would suggest that this is one which causes no symptoms or signs either mechanical or infective. The tonsil naturally enlarges after the age of 2 years and gradually declines in size after puberty. It is found that pathological hypertrophy, although it may occur in infancy, usually corresponds with the period of decay of the milk teeth, and again some time after the development of the secondary ones.

Mouth-breathing and Caries.

The effects of enlarged tonsils may be mechanical, causing difficulty in speech or deglutition. More important, however, are the results of infection, either in the tonsil itself or in the lymphatic glands or body generally. I have previously mentioned some of the more important varieties and results of infection. Apart from those rarer cases of enlargement of the lymphoid tissues generally—such as occurs in lymphatic leukæmia, in which the tonsil participates—the main factor in causing hypertrophy is infection, the infection resulting from the presence of organisms in the mouth and throat.

The enlargement of the pharyngeal tonsil, with the consequent establishment of mouth-breathing, is a factor in the production of tonsillar hypertrophy. One way in which it acts is to transfer to the mouth and throat the duty of filtering the inspired air. The second is in the production of dental caries, which is aggravated by mouth-breathing. This relationship is illustrated in Table VIII., taken from Dr. Wheatley's report. In children of 5 years with adenoids of such degree as to lead to mouth-breathing carious teeth were present in 16·7 per cent. in excess of the others. In children of 12 years of age with a similar condition the excess of carious teeth was 22·7 per cent. A third factor, if the results of Lenart's experiments are confirmed, is that the tonsil may receive organisms by means of its afferent lymphatics from the nose.

TABLE VIII.—*Adenoids causing Mouth-breathing.* (*Dr. Wheatley's Report, 1911.*)

Children aged 5 years—	
Caries in excess of others ...	16·7 per cent.
Children aged 12 years—	
Caries in excess of others ...	22·7 per cent.

The relationship of carious teeth to tonsil hypertrophy is shown by the greatest frequency of hypertrophy in the fifth, sixth, seventh, and fourteenth years of life. At this earlier time the greatest number of carious teeth are usually present, while at the later period the first molars may also become carious. The high percentage of enlarged tonsils in those with carious teeth is well shown in the table from Dr. Jones's report. (Table IX.)

TABLE IX.—*Showing Percentage of Enlarged Tonsils and Number of Carious Teeth.* (*Dr. Jones's Report, 1911.*)

Carious teeth	0	1-4	over 5
Enlarged tonsils	41·9%	52·8%	67·0%

This relationship can be demonstrated clinically by the beneficial effect on tonsillar hypertrophy by rendering the mouth clean. The reports of the Chief Medical Officer of the Board of Education abound in tables, statistics, and important information relative to these facts.

The specific fevers play an important part in the production of tonsillar enlargement, and one is struck by the frequency by which all trouble is dated from an attack of scarlet fever, diphtheria, or measles.

Condition of Tonsils and Glands.

The degree of hypertrophy of the tonsil varies greatly, some being so large as to meet in the middle line. This type is one which lies almost entirely beyond the faucial pillars and is pedunculated. In other cases, however, the tonsil may reach an extreme grade of enlargement without projecting beyond the anterior pillar of the fauces. The shape of the tonsil also varies greatly. Several distinct types may be recognised, but there are numerous intermediate forms. From being a hollow organ the hypertrophied tonsil tends to become more and more solid owing to the accumulation of lymphoid tissue around the lacunæ, until eventually these become narrow channels, having their orifices obstructed and tending still more to produce the stasis of their contents, and the accumulation of organisms and débris within them. This renders the lacunæ more susceptible of infection by damaging their delicate epithelial lining, and also accounts for the formation of the plugs in the lacunæ or in the main tonsillar fossa. After infection has persisted for some time the tonsil tends to become more fibrous and to diminish in size. In spite of this diminution in size the tonsil still remains septic and may continue to manifest its condition accordingly. It is important to realise that the enlargement of the tonsil may be temporary and capable of completely subsiding. This is well exemplified by the re-examination of school children two or three months after inspection, when the tonsil enlargement may have completely subsided and no evidence of infection can be obtained.

In order to determine the condition of the tonsil as far as possible, in addition to mere inspection of the throat the patient should be made to retch, when the tonsils are forced forwards and towards the middle line and stand out prominently. Under these conditions their exact size and shape can be determined. In order to judge of their septicity, if this is not manifest on simple inspection, the tonsillar fossa or lacunæ should be explored with a bent probe. In all cases the tonsillar glands should be examined by palpation while standing behind the patient, and in a large percentage will be found to be enlarged. Dr. Priestley in his 1910 report gives the following table (No. X.) in which the relation of enlarged tonsils to enlargement of the cervical glands is shown.

TABLE X.—*Relation of Enlarged Tonsils to Enlarged Cervical Glands.* (*Dr. Priestley's Report, 1910.*)

Children.	Number examined.	Enlarged tonsils.	Enlarged cervical glands.
Years—5- 6	8487	19·5 per cent.	23·4 per cent.
,, 6- 9	8578	19·6 ,,	18 7 ,,
,, 12-14	4749	20·5 ,,	10·7 ,,

Analysis of a Recent Series of 100 Cases.

Amongst the commonest symptoms repeated sore throats, tonsillitis, peritonsillar suppuration, and enlargement of the tonsillar glands are the most important. Evidence of more general infection may be manifest, such as anæmia or endocarditis. It is important to notice that attacks of acute tonsillitis in these cases may be conspicuous by their absence, the whole process being insidious and gradual. An analysis of a recent series of 100 cases operated on by me gives the following results. (Table XI.)

TABLE XI.—*A Series of 100 Cases.*

Sore throats	70 (70%)	Removal—		
Tonsils—		Complete	190	(95%)
Large	34 (34%)	Incomplete	8	(4%)
Medium	42 (42%)	Shape—		
Small	24 (24%)	Common	123	(61·5%)
Glands—		Embedded	70	(35%)
Large	14 (14%)	Projecting	6	(3%)
Medium	20 (20%)	Glands tuberculous ...	11	(11%)
Small	62 (62%)	Recurrent	4	(4%)
Infection	120 (60%)			

70 per cent. of the patients had suffered from attacks of tonsillitis or sore-throat. The tonsils were considerably enlarged in 34 per cent. of the cases and moderately enlarged in 42 per cent. The remainder were judged to be of normal size or atrophic. In 96 per cent. the tonsillar lymphatic glands were enlarged, being definitely palpable in 82 per cent. In 14 per cent. the glands were sufficiently large to demand surgical treatment, and in 11 per cent. of the cases were considered tuberculous. In 20 per cent. the glands were moderately enlarged, being easily palpable and in most cases visible.

Gross infection—shown by the presence of débris, pus, or foreign bodies—was found in 60 per cent. of the tonsils removed. Four cases had previously been operated on, and needed a second operation for tonsillitis or enlarged glands. For the removal of the 198 tonsils the guillotine was used in every instance. 95 per cent. of these tonsils were completely removed in their capsule, in one piece in the majority of cases; occasionally, however, owing to the size or shape of the tonsil it was necessary to remove it in two or more pieces. The tonsils were definitely pedunculated in only 3 per cent. of the cases; the embedded type was present in 35 per cent.; while the common variety, that with the projecting and almost solid lower pole, with the upper part hidden between the pillars and forming a cavity surrounded by folds of lymphoid tissue, was present in the remaining 61 per cent.

TREATMENT.

The principles to be adopted in the treatment of tonsillar disease may be summed up as follows. So far as the individual is concerned, where the symptoms are mainly or entirely mechanical, and fail to subside in three months after removal of any source of infection, partial removal may suffice. Tonsillotomy, however, has this disadvantage—the basal portion of the tonsil may enlarge and again cause symptoms. In addition to this many hypertrophied tonsils, so far as can be ascertained on inspection, do not appear to be grossly infected. In those cases which are grossly infected the basal portion, often the most diseased, is left behind and may commence to give trouble, especially if some of the lacunæ become partially or entirely sealed up in the process of healing.

When infective symptoms predominate in the tonsil itself, such as acute tonsillitis or chronic lacunæ infection, or when the tonsils are in addition enlarged, any source of infection must be removed, especially carious teeth. Nasal breathing must be re-established, and the case watched to see the effect of the treatment. Where the tonsil is too severely affected to be capable of recovery, as judged by the recurrence of symptoms and the failure of the above measures, then total removal is indicated. Enucleation of the tonsil must necessarily prevent tonsillitis, and while it does not entirely prevent pharyngitis such attacks are usually materially lessened in frequency. When repeated quinsies have occurred further attacks may be prevented by removing the source of the infection, the tonsil.

For lymphatic gland infections, where tuberculosis is suspected tonsillectomy is indicated; the course of the glandular enlargement determines whether this also may require operation. In pyogenic infections of the glands the tonsil must be dealt with when the acute lymphadenitis has subsided or been operated on if suppuration has supervened. Chronic glandular enlargement of the mild or moderate degree is so frequently met with in hypertrophied tonsils that when the tonsil recovers its normal character the glands subside also. It should be a rule that no tonsil should be removed when acutely inflamed. For more distant infections, when the tonsil is suspected of being the focus, removal is indicated when the general condition is satisfactory.

In all these cases total removal is the operation of choice. It presents no greater danger than incomplete removal and can be readily accomplished by the guillotine alone, by a method first described by Mr. Whillis and myself in January, 1910. While these methods directed to the individual are of great importance there is no doubt that prevention of tonsil infection should be our chief aim. This is to be obtained by the advance of hygiene, personal, in the home and school. The maintenance of nasal respiration, the prevention of dental caries, and the proper supply of food in sufficient quality and quantity will greatly diminish the prevalence of this condition. The provision of a cleaner air supply and the prevention of infection by milk are measures needing attention. When that delicate balance between health and infection is upset and the tonsil, a useful organ, becomes diseased and incapable of recovery, a timely removal of this focus may prevent more grave illness and disability. The question of infection of the tonsil and from the tonsil is not to be summed up in some form of operative procedure, but by the attention to the numerous measures I have tried to indicate.

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BRITISH MEDICAL ASSOCIATION.—The annual Representative Meeting will take place at the Connaught-rooms, Great Queen-street, W.C., on July 23rd.

THE TREATMENT OF STAMMERING.—A clinic for the treatment of stammering is being conducted at St. Thomas's Hospital for children who are already under treatment at the hospital for some other disease. The patients are treated twice a week in instructional classes.

A NOTE ON THE TREATMENT OF SEPTIC WOUNDS.

BY A. MARMADUKE SHEILD, M.B. CANTAB., F.R.C.S. ENG.,
CONSULTING SURGEON TO ST. GEORGE'S HOSPITAL.

HAVING undertaken the care of a number of surgical beds in one of the Exeter emergency hospitals, I wish to offer a few remarks on the treatment of septic wounds. The excellent articles which have lately appeared in THE LANCET from Sir Watson Cheyne, Sir Almroth Wright, and others have been most valuable and helpful to the whole profession.

It is obvious from the general trend of modern experience that removal of all foreign substances, free drainage, and especially the mechanical washing away of discharges from every pocket and recess, are of more importance than the use of antiseptic fluids, which can have little or no effect on organisms in the diluted state in which lotions can be safely employed. Warm saline fluid is probably as good a "flushing agent" as can be used. I have seen no great stress laid on the use of long immersions in a warm water bath. For wounds of the limbs this is an invaluable method. I used constantly to employ it for septic wounds about the anus and perineum, especially in bad fistula cases. The results were striking, and doubtless due to mechanical removal of pus and organisms, the fluid percolating and penetrating everywhere.

I was particularly impressed with the wisdom of Sir A. E. Wright's remarks on the treatment of sepsis by physiological methods. This has been too little considered. Everything that improves the health, strength, and appetite promotes healing and diminishes sepsis. It was this long ago which led Paget to give that ancient but excellent drug—the yellow bark—to his patients, and to advise the air of Margate and the East Coast for patients suffering from tuberculous wounds and glands. And this brings me to speak of a consideration which, I fear, has not received the attention its importance deserves. I refer to the marvellous influence of constant exposure to air and sun on those suffering from discharging and septic wounds. Having experienced the benefit of this in my own long and desperate illness, I am able to speak with some confidence. The rapid healing of wounds in animals and savages, with no treatment, has long been known. A gunshot fracture of the limb of a pheasant or hare will unite readily, under a covering of earth, feathers, and fur. I have been informed that the Zulus carried their wounded to the top of a high hill and there left them, recovery being rapid and sound. Nothing is more striking than the rapid recovery from even bad wounds, among country or sea-faring folk, as compared with the pallid occupant of a London slum. In my past practice I frequently sent down to the east coast cases of wounds which were tedious in healing, and the promptness of recovery was generally quite noteworthy. I feel sure that in hot summer weather buildings in a large city are not ideal places to promote the bodily vigour essential to combat the discharges and exhaustion of a septic wound.

It is unfortunate to have to criticise arrangements already made, but, speaking with all respect, I cannot but regard the crowding of wounded into large cities as faulty. I believe at Cambridge a large "open-air" hospital is established with good results. It would be very interesting to hear the views of the surgeons there on the value of such an institution, especially on the health of the nurses and attendants. I believe the air of high altitudes and of the east coast to be the most beneficial.

I fear that many of these remarks are empirical, and I leave to the bacteriologists the explanation of an undoubted and important clinical fact. It is unfortunately only too likely that in the coming months our arrangements will be inadequate. I strongly urge upon the authorities the establishment of matchwood hut hospitals, or tents, on high commons, or on the coast, rather than crowd the wounded into improvised hospitals in towns. It would be less costly. Cases of an offensive nature are easily isolated. The making of latrines would do away with risks of bad drainage. There is no risk of fire, and this is not one to be ignored in case of a Zeppelin raid. The health of nurses and attendants is maintained at a high standard. There would be no need to send away patients to convalescent homes.

I should be glad if this article would promote discussion on an eminently important matter, and the opinion of leading surgeons is earnestly to be desired.

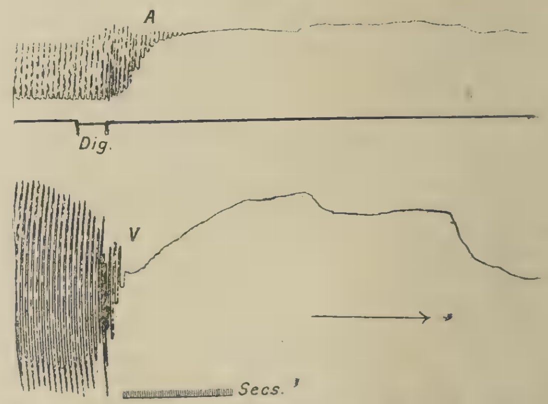
Budleigh Salterton.

HEART PERFUSION WITH EXCRETORY TOXINS.

BY D. T. BARRY, F.R.C.S. ENG., M.D. R.U.I.,
PROFESSOR OF PHYSIOLOGY, UNIVERSITY COLLEGE, CORK.

BY way of comparison with the action of excretory toxins on the heart, a record (Fig. 1) is here given of that of digitalin which bears a certain resemblance to them. A 1 per cent. solution of digitalin in Ringer's fluid quickly caused arrest of both auricle (upper tracing) and ventricle (lower tracing) in this toad's heart. The heart rapidly dies with digitalin of this strength, so that neither perfusion with Ringer's fluid nor other means can restore activity in the muscle. With weaker solutions recovery may be brought about. Digitalin has a uniform toxic action on the whole heart muscle. Schmiedeberg[1] considered the effects of digitalin to be a loss of elasticity in the muscle.

FIG. 1.



Records of tracings of (A) auricle and (V) ventricle of toad's heart after treatment with digitalin, 1 per cent., in Ringer's fluid.

The heart is exposed to the action of certain excretory toxins of the urine and fæces when the mechanism of their expulsion is defective, or, it may be, to these toxins or their precursors normally on their way to elimination. It was thought advisable to test this action by perfusion of the toad's heart.

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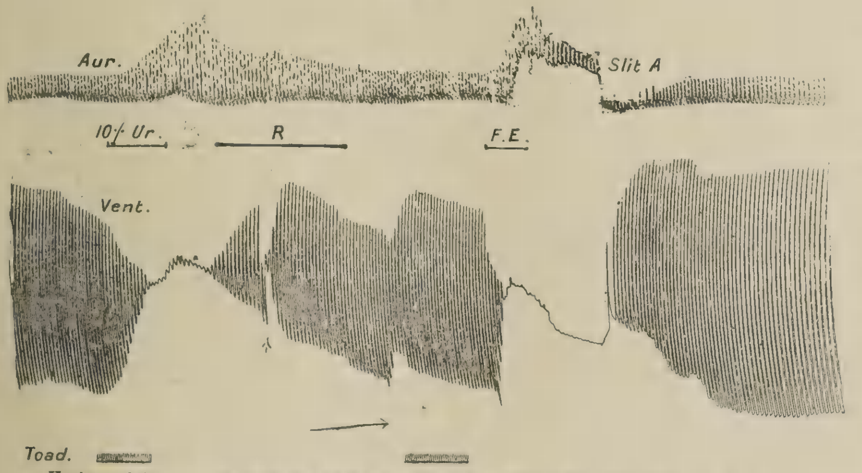
[1] Schmiedeberg: Beiträge zur Anatomie und Physiologie, Leipzig, 1874, p. 222.

Method.—The inferior vena cava below the liver was isolated and a small cannula inserted. This procedure as described by Mines[2] is made easier by allowing a drip from the cannula which clears the slit in the vein wall. A cannula communicating with three perfusion bottles has been used in the present instance; one contained freshly prepared Ringer's solution, the second a mixture of human urine and Ringer's solution, and the third fæcal extract made with Ringer's solution. Strengths of 10 and 15 per cent. have been tried. Up to the latter concentration the extracts are practically neutral to litmus; the hydrogen ion concentration was not determined. The aortæ are cut across to provide a free exit to the fluid. A uniform velocity of feed is arranged by adjusting stopcocks on the supply tubes.

The toxicity of these solutions is greatly diminished by boiling and by allowing them to stand for a few days. If 10 c.c. of urine are evaporated to dryness and extracted with 10 c.c. of water and 90 c.c. of Ringer's fluid the solution has very little toxic effect, which practically disappears if the residue be incinerated before extraction.

FIG. 2.

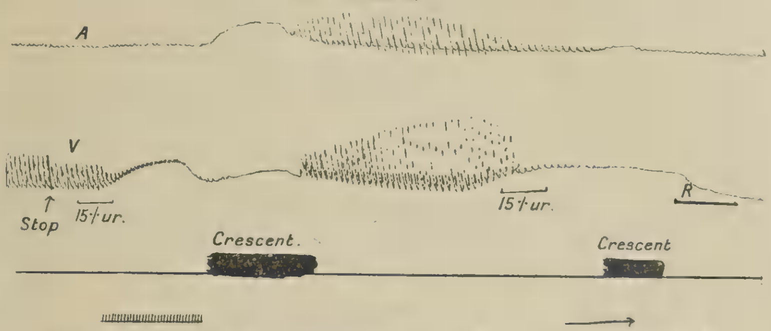


Horizontal lines marked UR, R, and F.E. represent perfusion with urine, Ringer's fluid, and fæcal extract respectively; time in seconds.

The first toxic effect is exhibited by the ventricle. A 10 per cent. urine solution in a few seconds brings about cessation of this chamber in a state of tonus (Fig. 2); the small "beats" seen on the ventricular record are due to auricular pull. The auricular beat is increased in force, which is due, in part at any rate, to increased tension; there was no previous perfusion. Recovery with Ringer's solution is rapid, though the ventricle is somewhat irregular for a time. The break in the recovering ventricle tracing, as shown by the arrow, is due to clipping the supply tube for an instant, thus shutting off the perfusing fluid. The ventricle in its tonic condition took a little time to recover after the passing over of auricular impulses into it. These impulses, powerful though they were, evidently were blocked in their passage to the ventricle until Ringer's solution restored the conductivity of the a.-v. bundle.

Fæcal extract shows a similar result (perfusion period shown by the line marked F.E.). The output from the ventricle being merely passive, the intra-auricular tension is greatly increased, till by making a slit in its wall the tension is relieved; the lever falls to the previous diastolic level and the ventricle beat is at once resumed with the now quietly acting auricle. It is pretty evident here that the depression (block) was mainly confined to the a.-v. bundle, the ventricle proper, although in a state of tonus, being ready to take up the beat vigorously the moment it was passed on by the extra stimulus provided by the snip.

FIG. 3.



Lines marked UR and R represent periods of percussion with urine and Ringer's fluid respectively.

A second application of the fæcal extract in this case had a slight effect on the auricle, while the ventricle beat was diminished, but diastole was not interfered with (no tonus). Apart from the fact that the conditions were considerably altered in this by the leak on the auricle — the perfusion pressure was not altered to meet it—there seems to be a certain degree of tolerance of, or immunity from, the toxins on their repeated use. This is exhibited by a slower onset of the effects and a diminution of the tonicity. If we turn on the urine solution we notice an improvement in the auricular beat, an improvement which cannot be ascribed simply to tension changes, bearing in mind the leak and the fact that the fæcal extract solution at the same velocity previously caused no augmentation of beat; the ventricle gradually grows weaker. It will be, of course, evident that the ventricle is not brought under the influence of the fluid to the same extent as before the auricle was slit. A certain amount of antagonism seems to exist between these poisons, but the question has not been properly investigated.

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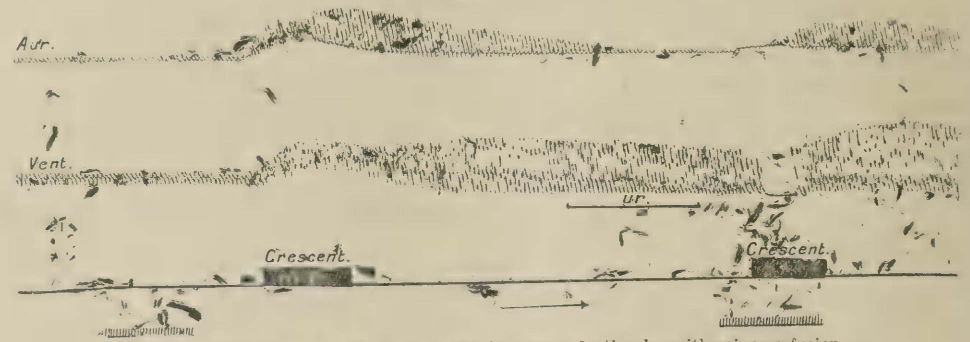
[2] Mines: Journal of Physiology, xlvi., p. 188, 1913.

The a.-v. bundle seems to be the part most affected by the excretory toxins which depress its conductivity, at the same time that they affect somewhat the ventricular muscle as a whole; a marked difference in the mechanisms of the two chambers is also demonstrated by their action. Irritability of ventricular muscle is completely lost only with strong solutions, and is quickly recovered if the action be not too long continued. The nervous mechanism, except the accelerator fibres, seems to be unaffected by the weaker solutions.

FIG. 4.



First crescent, stimulus with Ringer perfusion; second, stimulus with urine perfusion.

In the tracing (Fig. 3) the drum was stopped for a little while to try to get a more effective pull on the auricle lever, but without success; the attachment of the silk was not interfered with. A strong solution of urine, about 15 per cent., causes marked tonus of the ventricle with a greatly diminished fundamental beat. Stimulation of the crescent (first signal mark) during this tonus causes arrest of both chambers, the auricle entering into a state of well-marked tonus. It will be noticed that there is no initial contraction of the ventricle (muscle irritability lost). At the end of the stimulation period both chambers beat regularly and forcibly. Perfusion with the same solution a second time is followed by a similar result, but crescent stimulation (second signal) is not followed by heart contractions. Perfusion with Ringer's solution (shown by line marked R) for about half a minute brings about recovery of the muscle irritability, as contractions, not shown in figure, occur at the beginning of the next stimulation period. Sympathetic stimulation, not shown in the record, at this period when the muscle shows recovery with Ringer's fluid, is capable of setting up rhythmic contractions at once; if it fails it is because the accelerators, more susceptible than the inhibitors, have also been recently stimulated and have not quite recovered. This third stimulation is followed after a short interval by strong rhythmic contractions in both chambers. A third dose of the poison causes arrest of the ventricle almost in diastole. The tonic effect, as already mentioned, disappearing. The muscle again recovers, as shown by contractions at the beginning of the fourth crescent stimulus, which is followed after an interval by strong regular beats.

The auricle throughout is not affected in the same way as the ventricle; during the third and fourth stimulation periods it is scarcely affected, and it continues to beat while the ventricle is quiescent. The interpretation of the results seems to be that urine in the strengths given has a toxic action on ventricular muscle, while a deleterious effect on the auricle is not apparent. Its depressing action on the a.-v. bundle is distinctly marked, a depression which seems to be in part muscular and in part nervous. The third and fourth stimuli cause a short arrest of the auricle and maintain the arrest of the ventricle. It would seem that inhibitor nerves are not paralysed, and it may be that the stimuli by acting on these help to prevent ventricle recovery; but the muscle and accelerator depression have not sufficiently recovered to respond to stimulation. There is a difference of susceptibility not only in the muscle of the two chambers but also in their nerves, the accelerators to the ventricle suffering more than the auricular ones; any marked interference with these latter soon causes a cessation of the beat.

To show the action of urine on the accelerator nerves a weak current is applied to the crescent of a fresh heart perfused with Ringer's solution. (Fig. 4.) It is followed by well-marked acceleration and augmentation. It is now perfused with a weak solution of urine that is not enough to cause marked deterioration of the beat, and so might obscure results, and the same stimulus applied. It causes a pure inhibition, affecting mainly the ventricle. There is little doubt but that the accelerators have been depressed by a solution which is too weak to cause any marked change in the muscle. The toxic effect of a weak muscle poison is to a great extent counterbalanced by the beneficial mechanical effect of perfusion: the weak urine solution here employed if dropped on a non-perfused heart causes after a little time a distinct weakening of the beat, although it affects mainly superficial muscle and not the susceptible a.-v. bundle. Again, the depression of the accelerators is not sufficient to interfere with the rhythm, the effect of the previous stimulation being probably to a certain extent antagonistic in this respect; but it is enough to bring out as the result of a weak stimulus the other factor (inhibitor) in the nervous balance, at any rate in so far as it affects the ventricle.

Cork.

THE ECONOMY OF THE ARMAGH GUARDIANS.—By 21 votes to 6, the Armagh guardians, on May 11th, refused to pay a substitute for Dr. R. T. Herron, medical officer of Armagh union infirmary and fever hospital, while the former was engaged at the front in His Majesty's forces, giving as a reason that they were bound to consider the ratepayers' money as if it were their own. Dr. Herron was a civil surgeon with His Majesty's forces at the time of the South African war in 1901–02, and was awarded a medal with four clasps.

THE INFLUENCE OF INJECTIONS OF CONTRA-TOXIN NO. 4 (MEHNARTO)

ON THE CONTENT OF OPSONINS IN THE BLOOD SERUM OF TUBERCULOUS PATIENTS.

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KING'S COLLEGE, LONDON;
AND
DR. LOUIS RAJCHMAN.

WE examined the influence of injections of contra-toxin No. 4 on the content of opsonins in the blood serum of patients under treatment. The technique employed was the classical one. Seventy-nine tests were made in all. Bacteria were counted in 100 leucocytes, two films were made from each test, and the indices determined after two examinations. Table I. gives the results obtained with patients under treatment.

TABLE I.—(*Fifteen Patients under Treatment*).

Patients.	Before injection.	After injection one week.	Two weeks.	Three weeks.
1	0·32	—	1·36	0·9
2	0·46	—	—	0·78
3	0·26	0·6	1·08	1·4
4	0 19	0·22		—
5	0·16	0·66	2·2	—
6	0·71	0·82	0·75	1·1
7	1·07	2·04	1·17	—
8	0·91	0·5	1·2	—
9	0·31	0·92	1·3	—
10	0·89	1·81	—	—
11	1·56	1·7	—	—
12	1·8	1·2	1·6	—
13	0·9	1·2	0·9	—
14	1·65	1·5	—	—
15	1·23	1 4	—	—

It was thought necessary to determine the behaviour of the opsonic index in normal persons injected with contra-toxin No. 4 so as to ascertain the influence of contra-toxin on normal blood serum. Table II. gives the results obtained with three "normals"; they were persons free from tuberculosis but suffering from gonorrhœa. It will be observed from the table that no distinct increase in the opsonic index against B. coli and staphylococcus could be recorded.

TABLE II.—"*Normal*" *Controls*, 1.

Patients.		Before injection.	One week after injection.	Two weeks after injection.
"N" ..	B. coli	1·06	0·73	0·82
	Staphylococcus	0·85	1·12	0·96
"P" ..	B. coli	1·6	2·04	1·9
	Staphylococcus	0·96	1·36	0·85
"G" ..	B. coli	0·82	0·75	0·90
	Staphylococcus	1·2	1·1	1·4

It was further thought necessary to carry out another control experiment in order to ascertain the opsonic index against tubercle bacilli in "normal" persons. Two persons suffering from neurasthenia and free from tuberculosis were selected. (Table III.) There was a slight increase in the opsonic index in the case "Edward"; but this increase was insignificant as compared to that recorded with tuberculous patients under treatment.

The above figures show that the opsonic content distinctly increased after injections of contra-toxin No. 4 in almost every case, and that in six of them the increase was very marked. It is difficult to say at the present moment whether the increase of the opsonic index against tubercle bacilli is a permanent one. Cases 1, 7, and 13 seem to indicate that after an initial increase there may be diminution, which, however, remains above the level of the opsonin content before treatment. It is, however, an open question for how long this increase continues, as no patient was examined for a longer period than four consecutive weeks.

TABLE III.—"*Normal*" *Controls*, 2.

Patients.		Before injection.	One week after first injection.	One week after second injection.
"Edward"	T.B.	0·83	0·92	1·02
	B. coli	1·1	0·92	0·95
	Staphylococcus	1·2	1·3	1·4
"William"	T.B.	0·76	0·84	—
	B. coli	0·98	0·96	—
	Staphylococcus	1·08	0·85	—

Further Opsonin Tests by Dr. W. E. COOKE and Dr. W. JOHNSTONE.

Further opsonin tests were carried out at the Ochil Hill Sanatorium, Milnathort, by W. E. Cooke, M.D. Liverp., M.R.C.P. Edin., D.P.H. Lond., late Medical Superintendent, Ochil Hill Sanatorium, and W. Johnstone, M.B., D.P.H. Camb., late Resident Physician. They report as follows:—

"In order to ascertain the permanency of the increase of opsonins against the tubercle bacillus in the blood serum of patients treated with contra-toxin No. 4 we extended our tests over a period of four months. In all we treated 25 patients, and the opsonin content in the blood serum of these patients was examined by us. The accompanying table (IV.) gives our results:—

TABLE IV.—*Results of Opsonin Tests at Ochil Hill Sanatorium* (*Dr. Cooke and Dr. Johnstone*).

Case No.	Date of first injection.	1913 19.11	1913 12.12	1913 18.12	1913 26.12	1914 2.1	1914 20.1	1914 27.1	1914 25.2	1914 3.3	1914 23.3
1	23.11.13	0·67	1·6	—	—	—	—	—	—	1·7	—
2	23.11.13	0·52	1·1	—	—	—	—	—	—	1·7	—
3	23.11.13	0·78	1·3	—	—	—	—	—	1·7	—	1·8
4	23.11.13	0·57	1·1	—	—	—	—	—	—	1·1	—
5	23.11.13	0·54	1·48	—	—	—	—	—	—	1·9	—
6	23.11.13	0·54	1·0	—	—	—	—	—	—	1·8	—
7	23.11.13	0·58	1·8	—	—	—	—	—	—	1·8	—
8	23.11.13	0·6	1·3	—	—	—	—	—	1·33	—	—
9	23.11.13	0·45	1·1	—	—	—	—	—	—	—	1·3
10	23.11.13	0·59	1·6	—	—	—	—	—	1·3	—	—
11	17.12.13	—	0·63	—	—	—	—	1·90	1·79	—	—
12	17.1.14	—	—	0·96	—	—	—	—	1·4	—	—
13	17.12.13	—	0·76	—	—	—	—	2·1	1·4	—	2·1
14	17.12.13	—	0·5	—	—	—	—	2·2	1·7	—	—
15	2.1.14	—	0·58	—	—	—	—	1·8	—	—	—
16	7.1.14	—	—	—	0·6	—	—	—	—	1·54	—
17	30.12.13	—	0·7	—	—	—	—	—	1·74	—	—
18	18.2.14	—	—	—	0·48	—	—	—	—	—	1 8
19	27.1.14	—	—	—	—	—	—	0·6	1·0	—	—
20	7.1.14	—	—	—	—	0·46	—	—	0·8	1·3	—
21	28.1.14	—	—	0·7	—	—	—	—	—	1·04	—
22	31.1.14	—	—	—	—	0·6	—	—	1·3	1·0	—
23	31.1.14	—	—	0·54	—	—	—	—	—	—	—
24	2.2.14	—	—	—	—	—	—	0·7	—	1·0	—
25	27.1.14	—	—	—	—	—	0·6	—	—	—	1·5

"The above figures lead us to conclude that injections of contra-toxin No. 4 caused a marked increase of opsonins in the blood serum of every tuberculous patient. It will be observed that there is a slight diminution after the initial increase, but one is forced to admit that even after the diminution the opsonin index remains stationary and permanent above the level of the opsonin content before treatment."

PROGRESS IN THE TREATMENT OF CATARACT IN INDIA.

BY HENRY SMITH, M.D., M.CH.R.U.I., V.H.S.,
LIEUTENANT-COLONEL, I.M.S.; CIVIL SURGEON, AMRITSAR.

THE accompanying table, extracted from the official records, shows the progress in the treatment of cataract in India, except in the minor provinces and native States, statistics of which I have been unable to obtain. It shows the work done in the past by the Indian Medical Service and the work we are now doing. It was in the late "seventies" that cataract extraction in India came into existence. Before that time the treatment of cataract was in the hands of the immemorial indigenous "lens coucher." All the progress we have made has been at his expense. The Punjab is his home. All over the Punjab we come across villages named Rawal Pindi—that is, Rawal's town, Rawal signifying the caste of lens coucher. From the Punjab at the end of the hot weather he migrates all over India; a number of them go to Europe and return at the beginning of the following hot weather.

Statistics of the Cataracts Operated on in the Leading Provinces of the Indian Empire.

Year.	Punjab and North-West Frontier Province.	United Provinces of Oudh and Agra.	Bengal, including Calcutta.	Madras Presidency and City.	Bombay Presidency and City.	Central Provinces
1881	265	2640	357	—	—	—
1882	507	3521	350	480	—	—
1883	435	4641	391	255	193	27
1884	596	6048	500	222	230	16
1885	948	6048	763	443	197	57
1886	1501	5506	551	407	219	112
1887	2459	5625	635	511	322	110
1888	2658	5966	893	730	266	114
1889	3857	6739	1225	749	265	109
1890	4013	7615	2017	1227	316	219
1891	4482	9455	1688	1103	290	174
1892	4294	8830	1597	1307	355	253
1893	5309	9124	1481	1271	362	479
1894	5305	9222	1407	1233	407	949
1895	6216	10565	1913	1234	487	1299
1896	5323	8923	2845	1425	490	1508
1897	4667	6514	3134	1562	382	964
1898	4534	5613	2560	1222	523	1020
1899	5319	5734	3051	1301	578	945
1900	5614	5971	2862	1472	697	733
1901	6590	5787	3159	1621	709	903
1902	5909	5535	3885	1495	879	789
1903	6107	5157	3537	1418	942	568
1904	7465	5023	3514	1346	1012	681
1905	7929	4994	3053	1149	917	777
1906	8317	6421	3653	1232	1010	828
1907	8122	5568	3366	1404	962	871
1908	8099	5474	4322	1034	985	973
1909	11156	5442	4145	1442	1238	1042
1910	11397	6168	4266	1187	1419	763
1911	12290	6825	4953	1344	1424	888
1912	15576	8846	2464	1526	1467	922
1913	16236	9905	1291	1655	1586	—
Pop.*	22,171,889	47,182,044	79,973,084	41,405,404	19,672,642	13,916,308

* Population at Census, 1911.
Total for the above provinces, 31,598.

The statistical table does not indicate the amount of cataract in India. It indicates the amount which has come under modern treatment. When the figures concerning the Punjab are examined it will be seen that, as in the other provinces, results were becoming stationary up to, roughly, the year 1898. Shortly after that date I began to teach extensively and to advocate intracapsular extraction, so that it has now become practically the operation of election in the Punjab. The progress made in the Punjab since 1900, when compared with that of the other provinces, speaks more in favour of intracapsular extraction than volumes of academic disquisition.

		Cataract operations.
The Punjab and N.W. Frontier Province	in 1881 had	265
	,, 1913 ,,	16,236
The United Provinces and Oudh ...	,, 1881 ,,	2,640
	,, 1913 ,,	9,905
Bengal Provinces with Calcutta ...	,, 1881 ,,	357
	,, 1913 ,,	1,291
Madras Presidency and city	,, 1882 ,,	480
	,, 1913 ,,	1,655
Bombay Presidency and city	,, 1883 ,,	193
	,, 1913 ,,	1,586
The Central Provinces	,, 1883 ,,	27
	,, 1912 ,,	922

The phenomenal progress since 1900 in the Punjab compared with the other provinces of India is undoubtedly due to the superior results obtained by intracapsular extraction. Nothing can controvert these facts. As far as matters surgical are concerned, those who are familiar with the Punjab know that we are dealing with a highly utilitarian people, a people who go entirely by results. Intracapsular extraction is beginning to extend rapidly to other provinces, and when it is extensively adopted I expect to see progress in these provinces similar to what we have in the Punjab. It is being noticed by all who adopt the operation in other provinces that the cases in their hospital rapidly increase in number at the expense of hospitals who adhere to Daviel's operation, thus showing clearly the patient's opinion regarding the comparative excellence of the two operations. I personally believe that it will not be many years before intracapsular extraction is the operation of election throughout the Indian Empire, and that those who stand out against it will disappear from want of material. The table above shows that we do over 31,000 cataracts a year in the Indian Empire, more than half of these operations being performed in the Punjab, with its 20 millions of people, the population of the Indian Empire being 315 millions. Twenty years hence there will be, I think, more than 60,000 cataracts a year coming under modern treatment in the Indian Empire. The fact that less cataract comes under modern treatment in other provinces than in the Punjab does not indicate that there is necessarily less cataract in those provinces. It does indicate that we have not secured the confidence of the patients in the same degree as we have in the Punjab.

I think, without encroaching on other men's work, I may claim to have established intracapsular extraction of cataract in the Punjab and in many other places in India. I do not claim to have been the first man to extract cataract in the capsule. Intracapsular extraction has been the dream of ophthalmologists since the days of Daviel. It has been tried by a number of men we know, and probably by many others whose names we do not know. Their methods were so imperfect that the risks associated with the procedure made it prohibitive, so that at the present hour they would all have ceased to exist.

I do claim that every detail associated with my name has been worked out by myself independent of even a suggestion from any other man; as, for instance, the method of completely exposing the conjunctival sac for disinfection and for exposing the field for the operation; the method and the importance of controlling the orbicularis muscle; the different methods of dealing with the different types of lens; the fact that an eye should not be subjected to meddlesome dressing any more than any other surgical wound, &c. Any one of the technical details which I have pointed out may in itself look trifling. It is only the experienced operator who comes to recognise their importance, and combined these details constitute a method which, as many of my pupils have shown, is not subject to greater loss of vitreous humour than the operation of Daviel in the same hands.

I have also shown that a cataract may be extracted at any stage of its immaturity as safely as when mature. I have thus established it as an operation which is destined to live and, in my opinion, to take the place eventually of Daviel's operation as distinguished from previous evanescent methods of intracapsular extraction.

I also claim that I have been the first man to teach the mechanical side of surgery as the mechanical side of any other part is taught. The practice universal in Europe and America is to teach the mechanical side of the surgical art by means of lectures and demonstrations. What other mechanical art is taught in this way? The procedure I adopt in teaching is to show the pupil in a considerable number of cases the method of operation, pointing out the importance of every detail. The pupil is then set to perform the operation before me on the living subject in a large number of cases. He is instructed as he proceeds, the mistakes he is making are pointed out and the reasons given, and I come to his relief in case of difficulties. A short course of training of this kind makes a man a more efficient operator than a lifetime of lectures or of looking at demonstrations. One advantage in this method of teaching is that it establishes the confidence of the operator in himself, which no other method does, or else forces him to decide that he had better confine himself to the physician's art. I have had as pupils a large number of the Indian Medical Service, of the Royal Army Medical Corps, and of the different missionary societies, together with Hindus, Mohammedans, Parsis, official and non-official, without respect to colour, caste, or creed. I have had surgeons from Great Britain, Australia, Canada, and especially from the United States. To teach men this way is a very strenuous and tiring task, as will be understood when the welfare of the patient is my responsibility and must be the first consideration.

This teaching I have been doing single-handed and alone, unrecognised by Government, in an institution grossly under-staffed and financially starved. It will be understood how much strain is involved when it is stated that the work I have personally done includes more than 35,000 cataract operations, with a corresponding proportion of other ophthalmic operations. It also includes as much general surgery as that done by any other man living. In addition to all this I have had my official work, the management of a jail during most of the time, the administration of the sanitation, medical charities, and medico-legal work of a district close on a million people. It is needless to say that I could not cover in teaching the whole field of ophthalmology in addition to my other work. It would take a "superman" to do that.

Considering that post-graduate schools in the different branches of medicine are springing up over the Indian Empire, and the amount of material represented by the foregoing statistics, it is surely time that we had a post-graduate school to teach the subject to those pursuing a career in ophthalmology in the Indian Empire. We should not leave post-graduates to the meagre material of our alien enemies, since it is to Vienna and Berlin men go for post-graduate instruction rather than to Great Britain. I would point out that the number of cataract operations in London in the year does not exceed 400–600, and in Vienna there are a few more.

It may be said that this is not the time to raise an issue of this kind, when the Empire is in labour. I contend that this is just the time when "the spirit is on the waters." The spirit is abroad throughout the Empire that we should develop our own industries and not be dependent on other countries, a sentiment with which I wholeheartedly agree. Why should not India take its position in the scientific field of ophthalmology, since it has incomparably more material than any other country in the world? It is a subject which surely appeals to every man in India. All we require to establish a school of ophthalmology in India is money. I hope our patriotic fellow citizens will respond to the crying need of the land of their birth. A school of this kind must be properly manned and financed. Its incumbents should not be paid on the principle that they are to eke out a meagre existence by means of private practice, competing with men who will do a cataract operation for 2 rupees. If it is to be a success, their pay and prospects should be so ample as to attract the best men available, as the prospect of private practice for such men may safely be calculated as approaching *nil* from this time onwards.

The Government is advancing rapidly as regards the improvement and development of their medical schools for undergraduates. Government is also instituting research schools and schools of tropical medicine all over India for post-graduates, but nothing has been done to promote instruction and research in surgery post-graduate. The gulf which stands between European and Indian is being very slowly bridged. Among the builders of this bridge the surgeon stands out pre-eminently. It is he who has paved the way for modern sanitation and modern medicine, though both are yet in their infancy. From the sweeper to the gaddi the surgeon comes most closely in touch with the real life of the people and their aspirations. He is their friend and confessor, so to speak; a man of no political authority and in no way connected with the "taxation of the poor" or the "punishment of the innocent." Surgery makes an infinitely greater appeal to the people of this country than medicine. The indigenous medicine man still flourishes under the shelter of superstition and fate, neither of which can shelter the surgeon's art; hence the fact that surgery is the pioneer and paves the way for medicine. So, I think, of post-graduate schools, one for surgery and surgical research should lead the way.

It is a mistake to think that because there are a large number of Indians becoming qualified in medicine, therefore medicine may safely be left to take care of itself in India. India never required higher-class men than it does at present and will do for many years to come, to lead the newly fledged profession in the way which experience in Europe and America has indicated, with all its humanitarian, scientific, and æsthetic aspirations. The whole tendency of the Indian profession, becoming so rapidly produced, is competition for fees, thus reducing fees to such a low scale that it is impossible for such a profession to devote any attention to the development of the scientific side of its art, the whole tendency being to reduce the profession to a mere trade, in which he who advertises loudest reaps the biggest financial advantage. We are told that Indians do not possess the scientific spirit. I think there is much truth in this statement at the present time. The study of science is but in its infancy in India, and we cannot therefore expect to see its people realising the seductive satisfaction to be gained by scientific research and its application to the alleviation of human suffering. Yet a people who for ages past have produced so many ascetics prepared to work through life for spiritual idealism, despising material welfare, have surely unlimited possibilities for the future of producing men who will give their lives to the interests of science, which are the interests of humanity.

The objects of this school which I advocate are: the study and teaching of the causes and prophylaxis of the many diseases to which the eye is incident in India; the teaching, both theoretically and practically, of the methods of treatment of diseases of the eye; and the utilisation of our material to such a degree that men and women from all the world will come for instruction to India.

TWO EXTRAORDINARY CASES OF LIVER ABSCESS.

By CLAUDE BURGOYNE PASLEY, F.R.C.S. IREL.,
MEDICAL OFFICER, TAIPING, FEDERATED MALAY STATES.

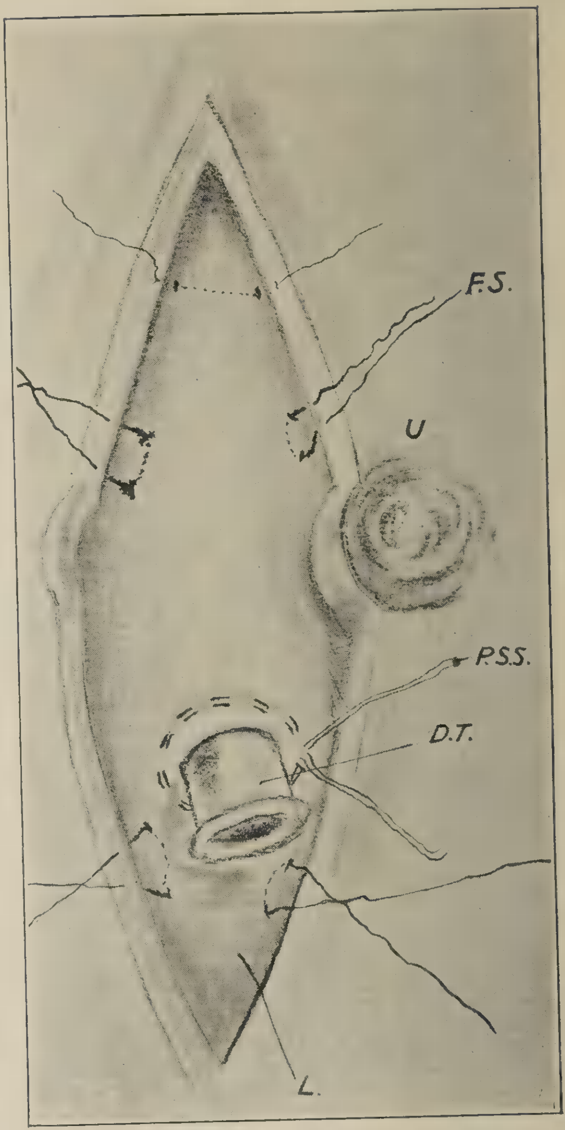
LIVER abscess in the Federated Malay States is fairly common, but the two following cases are, I think, worthy of record from the fact of their remarkable size, larger than I can find recorded in any publication that I have been able to consult, and also for the reason that although the patients were extremely emaciated and constitutionally extremely ill they both recovered perfectly, thus showing that no liver abscess, however large and however ill their possessors may be, can be considered as hopeless.

CASE 1.—The patient, a Chinese mining coolie, aged 40 years, was admitted to hospital on Nov. 9th, 1914. He complained of a large slightly painful swelling in the abdomen, which he first noticed one and a half months previously. There was a history of dysentery three months prior to admission and lasting for about 14 days.

On examination the abdomen was found enormously distended, resembling closely the abdomen at full-term pregnancy. An enormous tumour was palpable, which gave the sensation of fluid under extreme pressure. It was slightly tender to touch. Absolute dulness extended from the pubic region up to and continuous with the hepatic area proper. The tumour extended equally into both umbilical regions laterally—in fact it practically filled the abdominal cavity. The patient's general condition was extremely bad; he was wretchedly thin, weak, and listless. There was absolutely no sign of jaundice, and no bile in the urine. Blood examination showed slight leucocytosis. Examination of stools gave a negative result. A provisional diagnosis of liver abscess was made and operation decided upon.

On Nov. 23rd I opened the abdomen in the middle line, the incision extending from a point 3 inches above to 3 inches below the umbilicus, thus thoroughly exposing the anterior aspect of the tumour. On passing my hand into the abdomen I was able to trace the tumour right down to the pubic symphysis upon which its lower sharp edge rested, and also upon the iliac fossæ on either side, extending laterally as far as the ascending and descending colic regions. Upwards it became continuous with the liver. No adhesions were encountered. The abdominal cavity having been most thoroughly packed off with sterile towels, I passed an exploratory needle into the tumour and evacuated a small quantity of thick yellow pus. A purse-string suture was then inserted around the area where I proposed freely to open the abscess and place a large drain. I next passed several fine silk sutures between the parietal peritoneum and that forming the liver capsule in such a way as to surround the area opened, and thus shut it off from the general abdominal cavity; these sutures were not tightened and tied until the abscess had been evacuated. I next plunged "Manson's" liver abscess trocar and cannula into the abscess at the site of the primary puncture. Pus under enormous pressure gushed out, and the abscess quickly emptied itself. I passed my finger into the abscess cavity subsequent to withdrawal of the cannula, but utterly failed to reach its limits. A large rubber drainage-tube was inserted and the purse-string suture tightened so as to prevent any leakage. The toilet of the surface of the liver having been attended to and the packings being removed, the fixation sutures were tightened and tied, thereby approximating the liver surface to the parietes. (Fig. 1.) A point of suture was passed

FIG. 1.

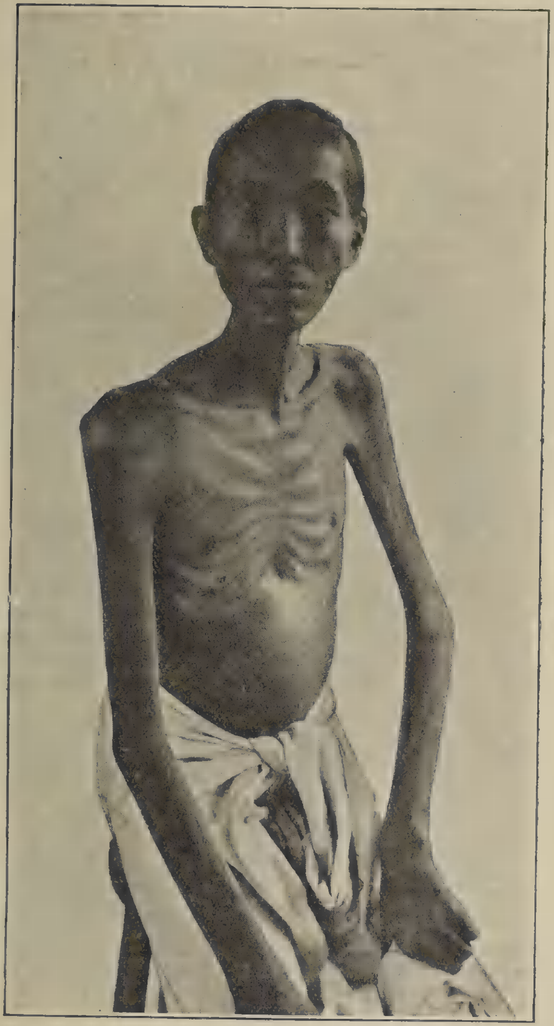


Illustrating method of operation, the parts being nearly life size. F.S., Fixation sutures. U., Umbilicus. P.S.S., Purse-string sutures. D.T., Drainage-tube. L., Liver.

between the abdominal wall and the drainage-tube, and the abdominal wound completely closed save where the tube extruded. I now placed a short glass tube to act as a window between the drainage-tube and a length of rubber tubing, which was allowed to terminate in a chamber containing carbolic lotion, thus encouraging drainage by syphonage.

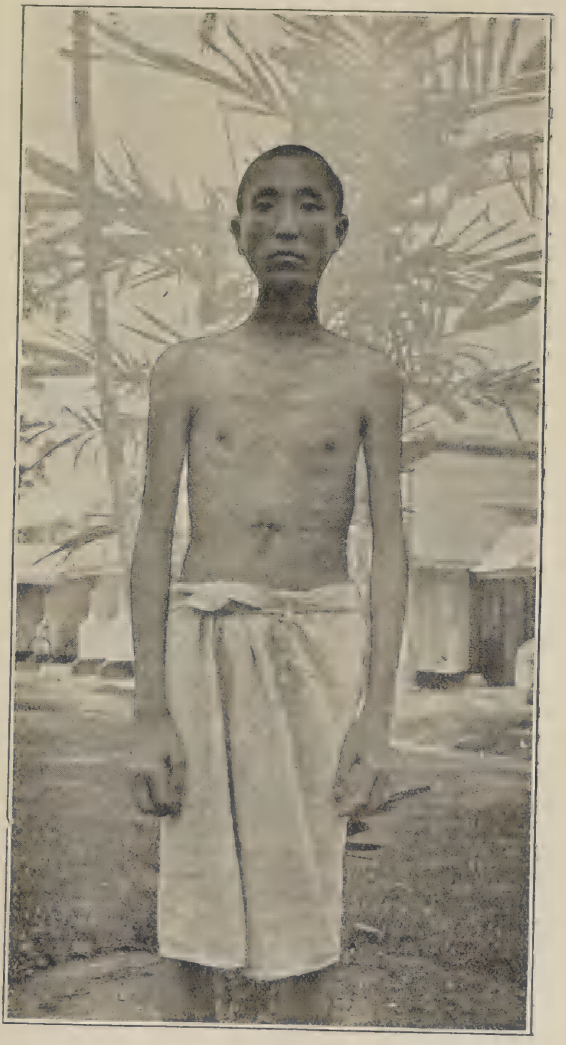
The patient stood the operation well, and his subsequent history was quite uneventful; the drainage-tube was finally removed on the fourteenth day after operation. For a further fortnight the abscess continued to drain through the sinus formed and gradually ceased, when the sinus itself slowly healed from the bottom. The patient rapidly improved, putting on weight, his appetite becoming very keen. His bowels acted regularly, and the motions were in every way normal. No amœbæ were found in swabbings taken from the abscess cavity. The only medicine given during his illness was emetine administered daily by hypodermic injection. He received 1½ grains per day.

FIG. 2.



CASE 2. Before operation.

FIG. 3.



Same patient after operation.

CASE 2.—The patient, a Chinese male aged 33 years, was admitted to hospital on Nov. 22nd, 1914. He complained of gradual increase in the size of the abdomen, and stated that he first noticed the increase during the earlier part of October. He had little or no pain; he complained, however, of progressive loss of strength and weight. He stated that he had an attack of dysentery about three months prior to the onset of his present trouble.

On examination an enormous tumour was found practically filling the entire abdomen. It gave a sensation on palpation of a sac containing fluid under very high pressure. As far as could be made out by external palpation the lower margin of the tumour was situated 1½ inches above the symphysis pubis. It extended laterally into each flank and seemed to originate from the liver. Examination of the blood showed a slight leucocytosis. Examination of the fæces showed the presence of ankylostoma and ascaris ova. His general condition was wretched in the extreme. (Fig. 2.) I operated upon him on Dec. 11th, the procedure in every respect being the same as that carried out in Case 1.

His recovery has been quite uneventful, and at the present date he is completely cured (Jan. 21st, 1915). His general condition has marvellously improved. (Fig. 3.)

He received ½ grain emetine hydrochlor. daily for three weeks by hypodermic injection.

I think it remarkable to have had under my care two such extraordinary cases within a few days of each other. The similarity of the history in each case is worthy of note. The rapidity of recovery and almost immediate improvement shown after operation, the total absence of subsequent complications, demonstrate, I think, that liver abscesses even of very great dimensions offer every hope of recovery.

The total absence of jaundice in both cases indicates that the functions of the liver, so far as the production and secretion of bile were concerned, were at no time interfered with, though the area of active and healthy liver must have been extremely small.

Taiping, Perak, Federated Malay States.

CEREBRO-SPINAL FEVER AND THE SPHENOIDAL SINUS.

BY DENNIS EMBLETON, M.A., M.B. CANTAB.,
MAJOR, R.A.M.C. (T.); BACTERIOLOGIST TO NETLEY HOSPITAL;

AND

E. A. PETERS, M.D. CANTAB., F.R.C.S. ENG.,
CAPTAIN, R.A.M.C. (TEMP.); NOSE, THROAT, AND EAR SPECIALIST TO NETLEY HOSPITAL.

(*Preliminary Article.*)

WE bring forward the following cases to show that empyema of the sphenoidal sinus has a relation, and probably a causal relation, to the infection of cerebro-spinal fever. The spread of epidemic cerebro-spinal meningitis was originally considered to be different from that of other bacterial infections, such as cholera and plague. It did not appear to start from a definite focus, and no traceable series of links could be discovered between cases. It has now been shown that the bacterial infection spreads from person to person, giving rise to a rhinitis, similar to that produced by other "influenza cold" organisms. Of the infected people a very small percentage subsequently develop meningitis. What determines the onset of meningitis, or the resolution of the rhinitis, has not been ascertained. It has been regarded as being due to a variation in the virulence of the organism or difference in the resistance of the individual. It seems important in this connexion to establish the path by which the meningococcus gains access to the meninges from the naso-pharynx. There are two possible routes: (1) By the blood stream, and (2) by the lymphatics.

With regard to the blood stream route, it seems probable that the meningococcus very early gains access to the blood, as do all micro-organisms in bacterial infections. That the organism has been demonstrated in the blood and urine of people suffering from the disease is not important in this connexion, since the organism could as readily have obtained access to the blood from the cerebro-spinal fluid as from the nasal mucosa. What is of importance is that the organism has been demonstrated in the urine of people carrying the micro-organism in the naso-pharynx, and yet having no symptoms of meningitis. The organism, to appear in the urine, must have circulated in the blood stream. So it is possible that the organisms may gain access to the meninges *viâ* the blood stream.

With respect to the route by the lymphatics direct from the naso-pharynx, we would bring forward the following points which we believe support this path of infection.

Post-mortem Examinations of Three Fatal Cases of Cerebro-spinal Meningitis.

CASE 1.—Naso-pharyngeal mucous membrane very swollen and rugous. Sphenoidal mucous membrane injected; cavity full of glairy pus; ostia impervious to a probe. Osteitis of bone surrounding sinus; numerous pus cells present. No organism seen or cultivated from the bone. Deep congestion of the inner table of the skull; in the region of the sinus the dura mater injected; thick purulent lymph lying on the surface of the dura mater.

CASE 2.—The same findings, but the meningococcus was readily demonstrated in both the pus cells in the sphenoidal sinus and the bone.

CASE 3.—The same findings, but in addition the organism was demonstrated in the cancellous bone, in which the inflammation was much more extensive and reached to the apex of the petrous bone.

In none of these cases was there any inflammation occurring in the cribriform plate, the ethmoidal, frontal sinus, or the middle ears. The findings suggest that the meningococcus infection spreads from the naso-pharyngeal mucous membrane into the sphenoidal sinus. The opening of the sinus is then obstructed by the swelling of the mucous membrane, which is very liable to excessive swelling in children and adolescents in the course of inflammation. The occlusion would be favoured by any abnormal contraction of the ostia or pathological change. Subsequently to empyema of the sinus infection of the dura mater may supervene. So it might be suggested that among the contacts who have a mucosa infection, it is those who develop an empyema of the sphenoidal sinus who develop cerebro-spinal meningitis. It is accepted that a drop or two of pus in the sphenoidal sinus may cause death (Sir StClair Thomson), while the operation establishing drainage is not a serious procedure.

Fatal cases of sphenoidal sinus empyema usually develop cavernous thrombosis, clinically evident by proptosis of the eyes. In these cases the organisms present cause thrombosis. On the other hand, when the meningococcus infects the sinus with an empyema thrombosis does not occur, and the meningococcus infects the meninges. The headache of cerebro-spinal fever is frequently referred to the occipital region, to which the pain of sphenoidal empyema or manipulation is also referred.

Clinically the carriers fall into two classes, typical examples of which are given: (1) Acute, lasting about three weeks; and (2) chronic.

CLASS 1.—Private ——, a Canadian, who yielded practically a pure cultivation of meningococci from his naso-pharynx. The mucous membrane of the nose and naso-pharynx was swollen and red, and exuded a clear profuse discharge. The ostia of the sphenoidal sinus were not located by a probe. Ung. hyd. nit. dil. ʒ ss., menthol gr. v., ol. olivæ ad ℥ i. was painted into the nostrils, and the tonsils were swabbed with lot. hydrogen. peroxidi. In three weeks a swab proved negative. The acute carrier may pass on to Class 2.

CLASS 2.—The chronic carrier does not exhibit the acute congestion of the nasal mucous membrane, and the organism is not always found, suggesting the presence of a reservoir which leaks from time to time. Case W. I. is an instance of this condition. Though the patient was actually suffering from the disease the same clinical conditions appeared on rhinoscopic examination.

Three healed cases of cerebro-spinal fever were admitted from Tréport Stationary Hospital, and one of us (E. A. P.) examined them. The mucous membrane of the nose and naso-pharynx was pale, dry, and shrunken. Nasal obstruction in one case prevented location of the sphenoidal ostia, but in the other two the ostia were unusually patent, so that an empyema was almost impossible. It is credible that these men owed their recovery to this patency.

With these data in hand one of us (E. A. P.) proceeded to drain the sphenoidal sinus in Case W. I. (referred to above).

An Extract from the Notes of Lieutenant J. S. ROWLANDS, R.A.M.C., *of the Welsh Hospital.*

CASE W. I.—Aged 17, North Irish Horse, landed at Havre August 21st, 1914. December: Bad cold; slight hæmorrhage from the lung. Jan. 17th: Rouen; tubercle diagnosed. Feb. 14th: Admitted to Welsh Hospital, Netley, with "rheumatic" pains; apparent recovery. 23rd: When up and about temperature rose to 104° F. (A cerebro-spinal carrier was subsequently discovered in the patient who occupied the opposite bed.) 24th: Severe frontal headache; erythematous rash; pain at back of neck. 25th: Definite meningeal symptoms; increased reflexes; Kernig's sign present. Lumbar puncture revealed cerebro-spinal fluid under pressure containing pus cells. No organisms discovered. (Mr. B. G. Klein's report.) 25 c.c. of serum were injected. 28th: Meningococci grown from cerebro-spinal fluid. March 6th: Patient has had in all eight injections of serum after lumbar puncture. Head still retracted. 7th: No growth from cerebro-spinal fluid. 9th: Relapse; naso-pharyngeal swab negative. 10th: Autogenous vaccine (5 millions) prepared by Mr. Klein were injected by Lieutenant Rowlands hypodermically. 12th: Soamin 5 gr. injected intramuscularly. 13th: Cyanosis. 17th: Twitching; dusky hue; incontinence of urine; no growth from cerebro-spinal fluid. 20th: Improvement and lower temperature. 21st: Another relapse. Lumbar puncture without serum injection. 25th: Meningococci in naso-pharynx. April 2nd: Meningococci not found in naso-pharynx. 3rd: Pulse 110–120; generally better; occasional delirium. 4th: Worse; lumbar puncture and serum. 7th: Meningococci not found. 14th: Meningococci were found in the naso-pharynx. Nasal treatment with ung. hyd. nit. dil. ʒss., menthol gr. v., ol. olivæ ad ℥i.—painted into the nose. 16th: Urotropin given; pulse 110. 30th: Transferred to Royal Victoria Hospital on concentration of cerebro-spinal cases. Up to this time 17 injections of serum have been given, but relapses still occur. May 3rd: Chloroform was given by Lieutenant G. C. Adeney, R.A.M.C., and the sphenoidal sinus opened from the nose by one of us (E. A. P.); a drachm of pus escaped from the left sinus. Neither ostium could be found with the probe, so the thin bone was broken down with Heath's small mastoid burr. Meningococci were found in the glairy pus.

Subsequent history.—The patient was rather better from the first day. There is now no retraction of the head and Kernig's sign is only slightly present, but the pulse keeps up to 115–125. May 7th: Temperature again up to 101°. May 16th: During the last week patient has done well; eats and sleeps well; control of evacuations. Temperature up to 100° on one occasion; Kernig present. Speech coherent. The sphenoidal sinuses are washed out daily.

Conclusions.

1. Sphenoidal empyema is associated with cerebro-spinal fever in a causal manner.
2. Cerebro-spinal fever is a meningitis due to organisms entering the meninges from the sphenoidal sinus by way of the lymphatics.
3. Adults are less susceptible owing to a diminished tendency to sphenoidal empyema, as they are not prone to excessive swelling of the mucous membrane and so to closure of the ostia, as is seen in adolescents.

It may be advisable to open the sphenoidal sinus in all cases of cerebro-spinal fever; it is certainly advisable to treat the naso-pharynx on the lines used for the acute carrier (Class 1, *ante*).

We would define this paper as a plea for nasal hygiene in the case of recruits.

We beg to acknowledge our indebtedness to Colonel T. C. Lucas, R.A.M.C., Officer Commanding Royal Victoria Hospital, and to Lieutenant-Colonel William Sheen, Officer Commanding Welsh Hospital.

LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY.—The annual general meeting of this society will be held at the offices of the society, 32, Craven-street, Strand, London, W.C., on Wednesday, May 26th, at 4 P.M., to receive and adopt the annual report and balance sheet and to elect officers.

GIFT TO NAIRN HOSPITAL.—In memory of her late husband, Captain Ewan James Brodie, of Lethen, of the Cameron Highlanders, who was killed in action at the battle of Ypres, on Nov. 11th, 1914, Mrs. Brodie, of Lethen, Nairnshire, has given to the Nairn Town and County Hospital the sum of £1000 to endow a bed, to be called the Lethen Bed. The gift has been gratefully accepted by the directors of the hospital.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

Osteotomy of the Tibiæ.—Self-mutilation of the Penis in Boys.

A MEETING of this section was held on May 14th, Mr. J. CHARTERS SYMONDS, the President, being in the chair.

Mr. T. H. KELLOCK showed a case of Double Osteotomy of the Tibiæ ten years after operation. The patient was a boy now aged 13 years. When 3 years of age his tibiæ were badly deformed and much bowed outwards and forwards; there was a separation of the internal condyles of the femora, when the malleoli were touching, of 3 inches. Open osteotomy of the tibiæ was performed, the fibulæ fractured, and the legs put up in plaster-of-Paris splints. At the meeting the legs were seen to be quite straight, and in the skiagram there was practically no indication of the site of the osteotomies, the line of the bone being normal. The boy was again in hospital for abdominal trouble—probably tuberculous peritonitis.

Mr. KELLOCK also read a short paper on a form of Self-mutilation of the Penis in young boys. After referring to the case of a boy, aged 8, from whom he had removed a metal ring which surrounded the glans and had ulcerated through the floor of the urethra, and to another in which cotton had been twisted round the base of the glans, he said that during the last few years he had met with three other somewhat similar cases. In each of these hair had been twisted round the penis just behind the glans. The last was typical of all three. It was that of a boy aged 5. He had been circumcised at the age of 3, after which ulceration had occurred behind the glans. Eighteen months before he had come under Mr. Kellock's observation the mother had found a piece of hair hanging round the penis. For a few weeks the urine had been passed through an opening under that organ. The glans was almost completely separated and the urethra was quite divided. The glans was attached by an isthmus only one-eighth of an inch in diameter, and was much discoloured. Immediately behind the corona was a circular sulcus which was completely covered by epithelium. Under an anæsthetic, by using a crochet needle, a hair was found twisted three times round the narrow isthmus. The history and condition of the other two cases were practically the same. The treatment by plastic operation after removal of the hair was one of no little difficulty. In two he had been able to reconstruct the urethra; in the third operation had been followed by sloughing off of the glans.

SECTION OF OBSTETRICS AND GYNÆCOLOGY.

Exhibition of Cases and Specimens.—Infundibulin in Primary Uterine Inertia and in the Induction of Labour.—Complete Inversion of the Vagina.—Diphtheritic Stenosis of the Vagina.—So-called True Hermaphroditism.

A MEETING of this section was held on May 6th, Dr. W. S. A. GRIFFITH, the President, being in the chair.

Dr. J. BRIGHT BANISTER showed: (1) A Twisted Omentum, simulating twisted ovarian cyst; and (2) Placental Attachment to Fœtal Head.

Mr. T. G. STEVENS showed a specimen of Rhabdomyoma of the Vulva. The tumour was of the size of a small orange, and had existed and slowly enlarged for the past three years. It was situated at the posterior part of the labium majus and was not pedunculated. The skin over it was thinned and on the point of breaking. Microscopically, the tumour is composed of a delicate fibrillated stroma, enclosing elongated masses of protoplasm with oval nuclei, but no very clearly defined cell outlines. The general appearance of these protoplasmic masses is that of immature striated muscle. There is some longitudinal striation to be seen, but no transverse striation can be demonstrated. The stroma in parts is degenerate and shows some liquefaction and minute cyst formation. The tumour is encapsuled and shows no evidence of malignancy.—Remarks were made by Dr. HERBERT SPENCER, Dr. CUTHBERT LOCKYER, and Dr. W. BLAIR BELL.—Mr. STEVENS replied.

Mr. W. Gilliatt showed the Viscera from a fatal case of Eclampsia.

Dr. C. E. Purslow demonstrated a case of Tubal Pregnancy showing Fœtus undergoing Dissolution. The specimen was removed by abdominal section from a married multipara aged 31 years. Menstruation had been regular until 12 weeks before admission to hospital. Amenorrhœa then set in, and continued until a fortnight before admission, since which time there had been continuous slight loss. There had been two typical attacks of pain with faintness. On examination there was a well-marked tumour in the left iliac region. This was diagnosed as a tubal pregnancy, but the physical signs were unusual in that the swelling was entirely above the pelvic brim and could not be reached by the finger either in the vagina or the rectum. The specimen showed the unruptured distended tube. Cross sections had been made, and these showed a diameter of 2¼ inches. The tube was filled with firm blood clot, in the centre of which was an amnial cavity containing turbid fluid, and in this was found the macerated head of a fœtus of about ten weeks' development; no other part of the fœtus could be found. The specimen was interesting as showing that a fœtus as far advanced as this could macerate and disappear in the liquor amnii.

Dr. Blair Bell read a short communication on Infundibulin in Primary Uterine Inertia and in the Induction of Labour. It was pointed out that infundibulin, introduced by Dr Bell in 1909, had established its place in obstetrics owing to its power of promoting and augmenting rhythmical contractions during and after parturition. Dr. Bell now called attention to the fact that although the induction of labour could rarely be effected by administration of infundibulin alone, yet this extract had the power of sensitising the uterus before labour; consequently the administration of infundibulin in conjunction with other mechanical measures, such as the insertion of a pack or of bougies, led to certain and rapid induction of labour. In this connexion a case of placenta prævia, in which serious bleeding occurred in the eighth month, was mentioned. The cervix was packed with gauze, and infundibulin was injected with an excellent result. The great value of infundibulin in primary uterine inertia also was emphasised. It was pointed out that this was as noticeable when the inertia was diagnosed before labour commenced as during labour. In the former circumstances the uterus could be sensitised and its tone improved during the last two weeks of gestation, and an interesting case was quoted by way of illustration.—The President, Dr. R. Drummond Maxwell, Dr. J. P. Hedley, Dr. Hubert Roberts, Dr. G. Drummond Robinson, and Dr. Purslow discussed the paper, and Dr. Blair Bell replied.

Mr. Douglas Drew read a short communication on Complete Inversion of the Vagina after Hysterectomy associated with Vesical Calculus. A patient, aged 53 years, had undergone a total hysterectomy for fibroids 12 years previously. Within a year of the above operation the vagina became completely inverted. The condition had not been treated for the past ten years. A large calculus was removed by suprapubic cystotomy, and the prolapse was treated by Le Fort's operation and colpoperineorrhaphy.

Dr. Drummond Maxwell read a short communication on Diphtheritic Stenosis of the Vagina.—Remarks were made by the President and Dr. Spencer.

Dr. Blair Bell read a paper on So-called True Hermaphroditism. The meaning of "true hermaphroditism," so far as man is concerned, was first discussed, and contrasted with the phenomenon seen in invertebrates. A complete classification of hermaphroditism in all its varieties was given to illustrate the biological importance of the condition. It was pointed out that the so-called "true hermaphroditism" in man should be termed "glandular partial hermaphroditism." All the really authentic cases (probably four in number, apart from Dr. Bell's case) have had ovo-testes. Many of the recorded cases of "true hermaphroditism" had been disproved, and this specially applied to those cases in which a separate ovary and testis had been recorded. Further, all the cases with ovo-testes had shown predominating feminine characteristics. Dr. Bell's case was that of a patient who had presented all the characteristics of femininity, with regular menstruation, until 18 months after puberty, when menstruation ceased and masculine characteristics developed; these included a bass voice and an excessive growth of hair on the body with masculine distribution. At first a diagnosis of suprarenal hyperplasia was made, and the patient was treated with ovarian and thyroid extracts. Later laparotomy was performed, and sections were removed from both gonades. The left had the macroscopic appearance of a testis. The pathologist, however, reported that the left gonad was the seat of columnar carcinoma. Consequently the abdomen was reopened, and the gonades, tubes, and fundus uteri were removed. On examining the sections Dr. Bell came to the conclusion that the left gonad was an ovo-testis and not the seat of a malignant growth. The patient was therefore a glandular partial hermaphrodite. The histological appearances were fully discussed, and the relation of ovo-testes to the normal development of the gonades was considered. Finally, criteria determining glandular partial hermaphroditism were suggested.

LARYNGOLOGICAL SECTION.

Annual General Meeting.—Exhibition of Cases and Specimens.—Cases of Warfare Injuries and Neuroses.

The annual general meeting of the above section was held on May 7th, Dr. G. William Hill, the President, being in the chair.

Dr. J. A. M. Broeckaert, of Ghent, ex-President of the Belgium Society of Oto-rhino-laryngology, was unanimously elected a corresponding member of the section.

The following cases and specimens were shown:

The President: A man, aged 55 years, in whom a Malignant Tumour at the base of the tongue had entirely disappeared after treatment with radium needles.

Mr. W. M. Mollison: A case for diagnosis.

Dr. J. Dundas Grant: A patient with Deformity of the Nose improved by a submucous resection of the nasal septum.

Dr. Irwin Moore: 1. A boy from whom a Naso-pharyngeal Fibroma had been removed through the mouth without any preliminary operation. 2. A man with a Growth of the Antrum extending into the Naso-pharynx. 3. A patient with Malignant Stricture of the Œsophagus who had been successfully treated with a Hill's tube for a period of nearly six months.

Mr. W. Stuart-Low: A patient suffering from Recurrent Columnar-celled Carcinoma of the Antrum.

Dr. Frederick Spicer: A case suffering from a new growth in the post-nasal space.

Dr. W. H. Jewell: A specimen showing a Halfpenny impacted in the Œsophagus.

Mr. W. Douglas Harmer: An old man with a Pharyngeal Fistula which had appeared after an incision of an abscess in the neck.

Sir William Milligan read a paper giving a description of the cases of Warfare Injuries and Neuroses treated at the 2nd Western Military Hospital. This was supplemented by a demonstration of X ray photographs by Mr. F. H. Westmacott.—Patients who had been injured in the war were shown by the President (2), Mr. Herbert Tilley (3), Dr. J. Coubro Potter (1), Mr. J. F. O'Malley (5), Mr. Walter G. Howarth (1), Sir StClair Thomson (2), Mr. G. H. L. Whale (10), and Mr. Stuart-Low (1). A general discussion of the subject was held, in which the following joined: The President, Sir Felix Semon, Dr. W. J. Horne, Sir StClair Thomson, Mr. Tilley, Dr. Dundas Grant, Mr. Stuart-Low, Mr. E. D. D. Davis, Dr. Coubro Potter, and Mr. O'Malley.—Sir William Milligan and Mr. Westmacott replied.

MEDICAL SOCIETY OF LONDON.

Exhibition of Early Books on Naval and Military Surgery and other Objects of Medical and Surgical Interest.

The annual general meeting of this society was held on May 10th, Sir J. Bland-Sutton, the President, being in the chair.

Mr. D'Arcy Power gave a short demonstration illustrated by the epidiascope on Early Books on Naval and Military Surgery from the society's library. He prefaced his demonstration by exhibiting a silver coin which had been lent to him for the purpose by Mr. Laurie Lawrence, F.R.C.S. Eng. The coin was a silver penny struck in the reign of Henry III.

by Thomas at London. The interest of the coin lay in the fact that *Thomas of Weseham* who struck the coin was the first serjeant-surgeon of whom anything is known. He had property in Coleman-street and was steward of the forest of Cannock. In 1260 the King granted him a die to mint with. The coin shown was one of three specimens found a few years ago at Brussels amongst a hoard of 100,000 pennies struck in the reign of Henry III. It was of the type minted between 1260 and 1270.

A portrait of *John Arderne* was then shown. He was born in 1307 and lived to a good old age. It was possible that he was at the battle of Crécy. It is certain that he was on terms of intimacy with many of the heroes whose deeds are told in Froissart.

There is no known picture of *William Clowes*, but his autograph was shown by the kindness of Dr. F. W. Cock, F.S.A. Clowes served in Flanders with the Earl of Leicester in 1583 and in the fleet against the Armada in 1588. He was a surgeon to St. Bartholomew's Hospital. His book "De Morbo Gallico" was shown.

A portrait of *John Woodall* (1569–1643) was exhibited, and with it a copy of his great book on surgery, "The Surgeon's Mate." He says that he was a poor man who had travelled extensively in France, Germany, and Poland. He settled in London during the Great Plague of 1603, and was afterwards appointed surgeon-general to the East India Company. His book served for many years as the text-book of naval surgery.

Richard Wiseman was shown to be a delicate-looking man who was born about 1621. He entered the Dutch Naval Service, but in the Civil War he became personally attached to Charles I. His chirurgical treatises were models of surgical literature.

John Ranby (1703–1773) is interesting as being the last serjeant-surgeon who accompanied his Royal master on active service. He was present with George II. at the battle of Dettingen in 1743. He wrote a tract on "The Method of Treating Gunshot Wounds," which set the fashion for many subsequent years. It is interesting now because he foreshadowed that associated aid for the wounded which has only recently been adopted by the formation of the Royal Army Medical Corps.

George James Guthrie (1785–1856) was the great surgeon of the Peninsular War in its later phases. He was appointed assistant surgeon to the Twenty-ninth Regiment when he was only 16 years of age, his colonel being 24 years old. Yet in spite of their youth the regiment was said to be the best led and the best doctored in the service. Guthrie's claim to recollection was that he taught assiduously that the large arteries were capable of digital compression. It was not necessary, therefore, to tie them in their continuity before operating, as had hitherto been the practice of military surgeons. He also taught that both ends of a wounded artery must be tied.

HARVEIAN SOCIETY OF LONDON.—A meeting of this society was held on May 13th, Dr. G. de B. Turtle, acting President, being in the chair.—The following cases were shown:—Dr. W. H. Willcox: Sarcoma of the Peritoneum in a man aged 29.—Dr. Graham Little: Two cases of Dercum's Disease; the lipomata were roughly symmetrical along the courses of nerves and in one case distinctly tender. —Mr. V. Z. Cope: Case for diagnosis of an excrescence on the leg.—Mr. Kenneth A. Lees: 1. Fractured Base in a girl in whom cranial nerve paralysis had occurred some days after the initial lesion. Taste was lost over the anterior two-thirds of one side of the tongue. 2. Sarcoma of the Thigh. 3. Cervical Rib.—Dr. F. S. Langmead: Graves's Disease in a girl aged 11.—The cases were discussed by the President, Dr. Graham Little, Mr. Cope, Mr. Lees, and Dr. Langmead.

THE NURSING OF TUBERCULOUS PATIENTS.—The Local Government Board have expressed their willingness to consider applications from councils for the employment of dispensary nurses who may have sufficient time to undertake the nursing of tuberculous patients in their own homes. When the needs of the army no longer preclude it, permission will be considered for the employment of additional nurses, either direct or by arrangements with voluntary nursing associations.

Reviews and Notices of Books.

Infant Mortality.

By HUGH T. ASHBY, B.A., M.D. Camb. Cambridge: The University Press. 1915. Pp. 229. Price 10*s.* 6*d.* net.

THIS recent addition to the Cambridge Public Health Series is a painstaking digest of the vast literature on the subject of infant mortality which has of late years accumulated through the labours of our Government and public health departments, and the deliberations of both national and international conferences. The mere reading of this literature is a serious undertaking; the epitomising of its main results in a form which can be understood by that large section of the public which is now beginning to take an interest in the subject is, indeed, a task before which the most courageous might well hesitate. On the whole, Dr. Ashby has done his work exceedingly well and has given fair and unprejudiced acknowledgment to the several factors which have contributed towards the great fall in the mortality rate among infants which the last ten years have witnessed in this country. The author clearly shows that the most important element in the successful rearing of infants is the intelligent coöperation of the mother, and that good housing and sanitary conditions are contributory factors of great significance.

In dealing with the special causes of infant mortality Dr. Ashby classifies them into three groups: (1) Preventable causes; (2) partially preventable causes; and (3) non-preventable causes. Of the preventable causes diarrhœa is described as the one which causes the largest number of deaths. It is strange that while due emphasis is given to the part which micro-organisms, improper feeding, and chill play in the etiology of this devastating disorder, practically no mention is made of the influence of heat. This question was to have been the chief subject for discussion at the International Conference on Infant Mortality, which would have been held in London this summer had not the war interfered with the arrangements. As causative factors considerable prominence is given to the house fly and the use of condensed as well as unboiled milk.

In discussing the ways by which infant mortality can be lowered the author states that the development of the infant depends on the following factors: (1) Inheritance, (2) environment, and (3) food. He says little can be expected from the side of eugenics except by trying to prevent those marrying who are physically unfit. It is curious that food should be regarded as something apart from environment. And again, there is something almost paradoxical in the view, which Dr. Ashby holds in common with many other authorities, that nurture as opposed to nature begins to take effect at the moment of conception—that is to say, that the hereditary factor is all-important up to the moment that the germ cell and the sperm cell fuse together into one organisation, and that from that moment congenital influence or maternal nurture begins to take effect. Are not the two parental cells subject to the influence of nurture before fusion? Or, in other words, is not what is generally called the hereditary factor also in some degree controllable?

Dr. Ashby regards the part which the official health visitor is likely to play in the prevention of infant mortality as the most hopeful of all those means which have so far been tried. He devotes some space to an account of the available facilities for training, and while giving full acknowledgment to the value of the amateur and voluntary health worker, he appears to think that they will not play so important a part in the future as they have in the past.

Differential Diagnosis, presented through an Analysis of Cases.

By R. C. CABOT, M.D., Assistant Professor of Clinical Medicine, Harvard University Medical School, Boston. Vol. I., pp. 764, 193 illustrations, 385 cases (Third edition). Vol. II., pp. 710, 254 illustrations, 317 cases. London and Philadelphia: W. B. Saunders Company. 1915. Price 24*s*. net.

THE method of teaching medicine by the description and discussion of individual cases of disease is both admirable and time-honoured. It dates, at any rate, from the days of Hippocrates, whose seven books, *De Morbis Vulgaribus*, contain records of numerous illustrative cases. The method was brought to a very high pitch of perfection in Morgagni's epoch-making two folios, *De Sedibus et Causis Morborum*, published at Venice in 1761, wherein especial stress was laid on the morbid anatomy of disease as illustrated by some 640 carefully conducted post-mortem examinations. The same method, developed from the point of view of the differential diagnosis of disease, is employed in Dr. Cabot's book now before us.

The first half of Vol. I., now in its third edition, appeared first in 1911, and is concerned with the diagnostic significance of pain in various parts of the body, as illustrated by 212 case-histories; the second half of the volume is given to 11 chapters of case-histories illustrating fever, rigors, convulsions, coma, cough, and other such prominent signs or symptoms. Vol. II., now appearing for the first time, contains 19 more chapters, and in each is given a careful study of a further important sign or symptom. The chapters in each volume are preceded by a table showing the relative frequency of the commoner causes of each symptom, based on about 180,000 cases treated at the Massachusetts General Hospital during six recent years, and on statistical articles from the literature. Each case is presented in the form of a summary, often with a diagram of its physical signs and a reproduction of its hospital temperature chart; then follows a "discussion" of its diagnosis, and finally, a paragraph on its "outcome" and the diagnosis, or error of diagnosis, that was made. In the first volume the diagnosis is definitely stated, having a line to itself at the end of each case described. This arrangement catches the reader's eye very satisfactorily, but unfortunately is not adopted in the second volume, where the reader has to search for the true diagnosis in either the "discussion" or the "outcome," often a lengthy process, requiring the wasteful expenditure of mental energy.

Dr. Cabot has made an excellent choice of prominent symptoms for illustration, and his typical cases are valuable as dealing with the commoner diseases rather than with rarities. The descriptions are fully and clearly written, and, considered as problems in diagnosis, are often of great interest. Not a little interesting, too, is the type of disease that they show to be prevalent in the Boston Hospital. Lead poisoning, for example, seems to be fairly common among water-drinkers; to judge by the case-histories, chronic alcoholism seems to be common, yet Dr. Cabot remarks (Vol. II., p. 269) that next to pregnancy "nephritis is the commonest cause that I know for morning vomiting." Again, in his table of some 3500 cases of hæmoptysis, he has to record no cases of aortic valvular disease, congenital heart disease, bronchitis, or exophthalmic goitre, for example, a statement that merely proves how widely the signs shown by different patients in different countries, and recorded by different observers, may vary in any one disease.

The book is clearly written, and may be cordially recommended to senior students of medicine, and to medical practitioners who wish to exercise their diagnostic powers. As Dr. Cabot points out, incorrect diagnoses are usually due to failure to recognise the physical signs present; less often they result from the inability to think correctly. His book is calculated to stimulate the thinking faculties most effectively.

Dynamic Evolution.

By CASPER L. REDFIELD. London and New York: G. P. Putnam's Sons. 1914. Pp. 210. Price 6*s*. net.

THE author of this book attempts to found a theory of evolution and degeneration upon the principles of physics. The abundance of ideas and considerable originality which characterise the work are unfortunately accompanied, as so often happens, by deficient knowledge and study of the facts. Conclusions and generalisations are thrown promiscuously before the reader, supported by evidence which is literally worthless.

The author starts from the assumption that "in the organic world we find bodies having forms of energy peculiar to themselves, which energy acts to individualise the bodies with which it is associated." This proposition is contrary to the opinion of most physiologists, but Mr. Redfield does not apparently know that there is any problem at issue in his statement: his attitude is simply a naïve assumption without a second thought given to it. After discussing the evolution of trotting horses, he comes to man. His main proposition is that the mental capacity of an individual is dependent on the amount of mental work performed by his father before begetting him. Hence the most capable men were born when their fathers were comparatively elderly and had worked hard. The effects being cumulative, the greatest men of all are those whose grandfathers, as well as fathers, were advanced in life before having children. This conclusion having been attained by the most dubious imaginable chain of deductions is clinched by printing lists of distinguished men whose births are separated by more than the average interval from the births of their fathers and grandfathers. The author states that he has never been able to find out anyone of considerable eminence, with the exception of Jonathan Edwards, who was born less than 58 years after his paternal grandfather. Furthermore, the mental characteristics of men are alleged to be dependent on the age of their fathers at their conception. They are military and aggressive if their fathers were less than 31; artistic, musical, and literary, if their fathers were between 31 and 40; statesmen, if between 41 and 50; moralists and philosophers, if their fathers were over 51. Why then, we may ask, was John Stuart Mill born when his father was only 33, and Herbert Spencer when his father was only 30? How was it that the great Lord Chatham was only 55 years younger than his paternal grandfather? But it is superfluous to cite illustrations in disproof of a theory so inadequately supported as that before us.

Another of the author's most important theories is that longevity likewise is dependent on the age of the father when the child was born. The author reaches this result by the following deduction: cell-division becomes slower as age advances; an elderly father, whose cell-division is slow, will produce a son whose cell-division is also slow; that son will therefore live long. And once again the argument is finished by the crudest possible statistics, which as set forth are quite powerless to prove anything at all, far less the conclusion desired by the author. Before Mr. Redfield attempts another book he should curb his imagination by contact with facts; we have here a raw collection of impulsive and untested ideas.

Malay Poisons and Charm Cures.

By JOHN D. GIMLETTE, M.R.C.S., L.R.C.P. Lond., Residency Surgeon of Kelantan. London: J. and A. Churchill. 1915. Pp. 127. Price 3*s*. 6*d*. net.

THE Malay States are but little known to any but extensive travellers, but they are a most interesting country from many points of view, whether we consider their anthropology, zoology, botany, or geology. The main subject of Mr. Gimlette's little book—namely, Malay medicines and poisons—is, as he says in his preface, of special scientific interest, and presents a large field for medical research.

As in all primitive countries medicine among the Malays is largely mingled with magic and charms, and Mr. Gimlette's first chapter is devoted to an account of the Malay "medicine man," who is called "bomor." It is curious to note the survival of ancient Greek philosophy in the modern philosophy of the Malay bomor, whose belief is given on p. 5 as follows: "According to the Kelantan bomor, disease is sent by God, and it springs from the elements, fire, air, earth, and water." Compare with this Plato in the Timaeus, cap. 82: "Now everyone can see whence diseases arise. There are four natures out of which the body is compacted, earth and fire, and water and air, and the unnatural excess and defect of these ...... produce diseases and disorders."[1] In the Kelantan belief, the elements have spirits (jinn) associated with them, and every human being has in addition an internal jinn peculiar to himself, without whose coöperation the external jinn of the element is powerless. Seeing that the Malays are Mohammedans the elemental doctrine probably reached them by way of Galen and the mediæval Arabic physicians. Diseases are held to become more powerful when the thought of man is fixed upon the symptoms, a doctrine which, as Mr. Gimlette reminds his readers, is in some way comparable to "Christian Science." Charms and spells are important adjuvants to the operation of medicines, and the author gives a selection, some translated and some, in an appendix, in the original.

Of the poisons mentioned in the book a good many are used as medicines—for instance, datura, opium, and arsenic. Of poisons used as such a certain number probably act solely as mechanical irritants, such as bamboo hairs, fish spines, and the bristles of a sea worm, though in the two animal products there is presumably some inherent poisonous substance, as is the case with the spines of the weaver fish of our own coasts. The bristles of hairy caterpillars are also administered as irritants. Most of the vegetable poisons are of the paralytic intoxicant type, but some cause choleraic symptoms, and some are applied to the skin to cause acute dermatitis. It is interesting to find that Malay poisoners hold the tradition of the poison which will kill at any distance of time according to the dose. "It is said that an accomplished Malay criminal can give a single dose of poison and time the death of his victim within three months, six months, or even three years, according to the dose and particular combination he uses." Mr. Gimlette adds that no clinical case of this practice has come under his own observation. The same tradition exists in Persia to this day, and it was commonly told of the sixteenth and seventeenth century Italian poisoners; but, though it would seem that so universal a tradition must have some foundation, no such poison is, so far as we know, known to science.

Mr. Gimlette modestly says that the ground of the field of medical research on the subject of Malay poisons is hardly broken in his book. He has, however, given us enough to make us express the hope that he will continue his tilling.

LIBRARY TABLE.

Paris Waits: 1914. By M. E. CLARKE. London: Smith, Elder, and Co. 1915. Pp. 289. Price 5*s*. net.—This little book is made up of a series of articles dealing for the most part with life in Paris from just after the declaration of war until the return of the Government from Bordeaux. Some of the chapters, however, deal with other places, such as Senlis, Meaux, and Orleans. Miss Clarke is a vivid and yet quite simple writer, and her descriptions of the psychology of Paris during the most anxious time are extraordinarily interesting. Of individual cases Miss Clarke relates a very striking one of a Parisian "who was well known to be among the most neurasthenic of Parisians. Nothing pleased him for more than five minutes, and he spent his days in grumbling, taking scented baths, dabbling in the arts, and trying on new clothes." He was called up for service, went to the front, became ill, and was sent back for treatment, and his one idea was to get back to service. And, as his sister said to Miss Clarke, "You should see him now. He refuses to shave, he thinks baths are superfluous, and we had to have a private dining-room in the hotel when he left the hospital because he refused to use a knife and fork. He says they complicate existence, and he told his wife she did too. C'est épatant, because, you see, if he has to go back it is much better that he should go feeling like that. He will be safer and we shall be less unhappy." If the reader wants a real thrill let him read the experience of the British Flying Corps mechanics related on p. 84, which recalls our youthful feelings on reading the escape of Monte Cristo. If the "seventeenth century prophecy" quoted on p. 113 *et seq* is authenticated it is certainly sufficiently amazing.

La Pratique Héliothérapeutique. By le Dr. JAUBERT (d'Hyères). Paris: Baillière et Fils. 1915. Pp. 96. Price 1.50 francs.—This is a small book of practical details regarding the use of the sun's rays in therapeutics; the theoretical side of the subject is touched upon only so far as it helps to explain the reason for the various modifications adopted in practice. The author has a very strong belief in the value of the sun bath in the convalescent stage, while also considering it an important adjunct to other therapeutic measures in cases of gout, rheumatism, diabetes, and nephritis. Many forms of arthritis, including tuberculous affections, are benefited by it materially, and the method seems to be particularly valuable for children and young subjects generally. To practitioners in this country the volume is of value chiefly as indicating a line of treatment for obstinate cases where the patient's circumstances allow of a visit to places abroad that are more abundantly supplied with sunlight.

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[1] Jowett's Translation.

The Pharmaceutical Pocket-book for Practitioners and Students. Edited by JOHN HUMPHREY, Ph.C., F.J.I. Fifth edition. London: Pharmaceutical Press. 1915. Pp. 360. Price 1s. 6*d.* net.—The fifth edition of this pocket-book will probably be of service to pharmacists rather than to members of the medical profession, although the latter will find it of use as a book of reference. For example, it contains valuable details relating to the schedule of poisons and to the sale of poisons in Great Britain, two subjects which are frequently mentioned in coroners' courts. Some trouble has been taken to convert the metric formulæ of the British Pharmacopœia into their equivalent imperial quantities. A comparison of the two columns is a sufficient justification of the adoption of the metric system—for example, it is interesting to compare the round numbers of decoctum aloes compositum with the awkward fractions of the imperial system. A section deals with the art of dispensing of doses and official medicaments, and a tabular statement is given of the materia medica of vegetable and animal origin. After details concerning equivalents and measures of length, mass and capacity, and of thermometric equivalents, various analytical data are appended dealing with the analysis of water, of milk, and of urine. It is interesting to find that nearly 80 pages are devoted to a dictionary of synonyms; happily most of these are not officially recognised. The section relating to the treatment of poisons is too concise.

JOURNALS AND MAGAZINES.

Annales de l'Institut Pasteur, April, 1915.—The diagnosis of tuberculosis by reactions in the serum is still in the experimental stage, and in view of the practical importance of the subject any carefully controlled researches which seem to promise a clinical application are of special interest. In this issue MM. E. Debains and F. Jupille record their observations upon a complement-fixation test which in their hands has afforded satisfactory results. They suggest that the difficulty found by previous workers has been in obtaining a satisfactory antigen, since that obtained from cultures of the tubercle bacillus upon a glycerin-peptone medium is variable. MM. Calmette and Massol found that a more satisfactory antigen was obtained by maceration of the bacillary bodies in peptone water; indeed, with such an antigen they obtained 92·5 per cent. of positive reactions in 134 serums from human tuberculous patients examined by the Bordet-Gengou method. MM. Debains and Jupille have, however, employed a different antigen—viz., Besredka's tuberculin obtained by growing the tubercle bacillus upon an egg-bouillon medium. They have rejected other antigens because they have found some of them inconstant in their action, while others have proved to be hæmolytic in the presence of normal serums, although by themselves they might not exert any action upon a hæmolytic system. The method they adopt is to employ a fixed dose of the antigen and to vary the quantity of complement. The intensity of the reaction is determined by measuring the increasing doses of the complement, previously diluted and titrated, which the serum to be examined can fix in the presence of the antigen. They first titrate the complement, using a dilution of 1 in 30, with at least two separate normal serums. The actual method of carrying out the reaction consists in placing 0·2 c.c. of the serum to be tested (previously heated to 56° C. to inactivate it) in each of five test tubes. To all but one of these 0·3 c.c. of the antigen, previously titrated, is then added, and to all of them certain measured quantities of the diluted complement and of saline solution. After half an hour at laboratory temperature and an hour in the incubator 0·1 c.c. of the hæmolytic amboceptor and 0·1 c.c. of a 20 per cent. suspension of washed red corpuscles are added to each tube, and all are replaced in the incubator for half an hour. They are then kept at the laboratory temperature for 20 minutes and read off. The results are recorded as positive, negative, or partially positive. The tube to which no antigen is added is a control to demonstrate that the serum examined is not anti-hæmolytic by itself. It is essential to control the reaction with at least two normal serums. MM. Debains and Jupille have found that serums which give a very strong positive Wassermann reaction are capable of fixing complement in the presence of Besredka's tuberculin, which they explain by supposing that the lipoids of the yolk of egg modified by the culture of the tubercle bacillus act as a syphilitic antigen. It is therefore advisable to do a Wassermann reaction at the same time as the tuberculous reaction. The authors have studied the blood of 610 persons, of whom 580 were examined clinically. The general summary of their results shows that of 59 patients suffering from pulmonary tuberculosis in the second and third stages with poor general condition 81·3 per cent. gave a positive reaction, of 95 patients in the first and second stages in good general condition 90·3 per cent. were positive, and in 61 cases with localised or doubtful signs 93·4 per cent. were positive. Fifty-two cases in the first or second stage, but with intercurrent affections, gave 89·4 per cent. of positive results. In 12 cases of pleural effusion of tuberculous origin only 9 per cent. were positive, while in 15 cases of dry pleurisy as many as 86·6 per cent. were so. In 18 cases of tuberculous meningitis and in 10 cases of miliary tuberculosis the results were uniformly negative. In 75 cases of tuberculosis in regions other than the lungs the positive results were as high as 96 per cent. Of patients clinically non-tuberculous, 121 were examined with only 17·3 per cent. positive, while 62 healthy persons only showed 3·2 per cent. of positive results. The number of positive Wassermann reactions obtained was 24 per cent. among the tuberculous patients and 35·5 per cent. among the others. If the Wassermann reaction is strongly positive and the clinical examination is doubtful, the result as regards the tuberculous reaction must be taken with reserve. It is interesting to note that in advanced pulmonary tuberculosis the reaction may be absent or only partial, that it is very often negative in pleural effusion, and almost invariably so in miliary tuberculosis and tuberculous meningitis. The authors are of opinion that their serum reaction is of definite clinical value, and their results if confirmed by other observers on a large scale would seem to justify their claim.

Revista de la Sociedad Medica Argentina.—This review for November and December, 1914, which has only just reached us, comprises some 400 odd pages, and those responsible for its production may be congratulated on the interest of its contents, the excellence, alike from the scientific and from the technical point of view, of its illustrations, and the quite noticeable beauty of its typography, the latter a feature which has struck us in other periodicals from Spanish and Portuguese America. The present volume opens with an article on the topography of the sphenoidal sinus by Dr. Ricardo Laspius, which contains much to interest both anatomists and pathologists, and is enriched by a number of admirable photographic illustrations.—Dr. Udaondo and Dr. Castex write on the myelodysplasia of Fuchs, citing three illustrative cases of this malady, the main characteristic symptoms of which are nocturnal enuresis, a general infantilism, certain skeletal malformations, hypertrichosis, and a marked degree of webbing between the second and third toes.—Dr. Ragusin recounts four interesting cases of twin birth in which, while one twin exhibited marked signs of congenital syphilis, the other was perfectly healthy.—Dr. Viñas describes an operative procedure—invagination of the appendix—which he advocates as an operation of election in all cases of early interference in which advanced lesions of the appendix and adhesions are absent. The appendix, after ligation and division of its mesentery, is invaginated into itself like the finger of a glove, the invagination being continued until the organ has completely disappeared into the cæcum, the little pucker left at the site of the base of the appendix being closed by a few peritoneal sutures. The invaginated organ, deprived of blood-supply, necroses and sloughs off into the cavity of the cæcum and passes per anum some five or six days after the operation. The author recommends this operation as easy, rapid, and, owing to the avoidance of any opening of the appendix, aseptic.—Among other articles of interest special mention may be made of that by Dr. Gonzalez on gravido-dynamic deformities of the pelvis, in which he maintains the erroneousness of the generally accepted view that dystocia from pelvic deformity is impossible in a woman to whom normal parturition has occurred, unless osteomalacia be present—in other words, that pelvic deformity, other than osteomalacia, is always primitive, independent of the gravid state and antecedent to the first parturition. Dr. Gonzalez maintains, on the contrary, that the gravid state may itself be a determining cause of pelvic deformity, and that the shape of the pelvis may alter between one parturition and the next, quite apart from osteomalacia. The article is copiously illustrated by outline figures of museum specimens and is an able and scholarly presentation of an interesting thesis.

In the *Revista Medica del Uruguay* for March Dr. Luis Morquio contributes a valuable article on the Diagnosis of Appendicitis in the Child.

Malaria e Malattie dei Paesi Caldi. Anno VI., April 20th, 1915. Rome: Via Farini 62.—This issue contains a report of a case of beri-beri by Dr. Lacava. The case was a typical one, and is of interest from the fact that it occurred sporadically in a village of Calabria in a girl who had never left her native country but who habitually ate large quantities of rice, sometimes to the exclusion of all other diet.—Dr. G. de Angelis, continuing his investigations on the streptobacillus pellagræ, which is considered by Professor Tizzoni to be the cause of that disease, has been able to demonstrate the presence of the organism in the stools of patients suffering from it. The identity of the organism in the stools with that obtained from the blood was proved by morphological characters and pathogenic culture; but while in the blood it assumes variations of form in relation to different phases of the disease, in the stools it always presented a more definite and fixed form.—Dr. F. Giugni has a paper on the transmissibility of canine leishmaniasis. Two puppies which lived for two months with a bitch affected severely with spontaneous leishmaniasis, and subsequently dying of it, were quite unaffected by it, although every measure was taken to favour the transmission of infection by fleas. Another paper on this disease is by the same author on the behaviour *in vitro* of Leishman bodies in the presence of other micro-organisms.—Sprue in Calabria and Sicily is the subject of a clinical contribution by Professor N. Gabbi, in which he describes several cases in a lucid and interesting manner. He inclines to the germ theory as the cause of this disease, and considers it probable that the infection is imported from the East by vessels which arrive at the port of Messina.

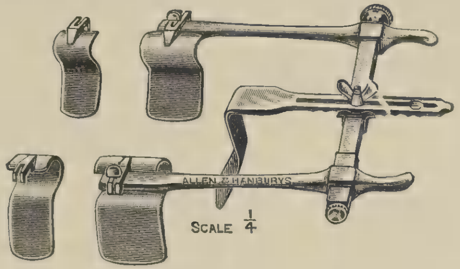
AT the Senate House, Cambridge, the Rede lecture has been delivered by Dr. Norman Moore, who took as his subject St. Bartholomew's Hospital in Peace and War.

Dr. and Mrs. A. C. Jordan are giving a concert on Saturday, May 29th, at 4.30 P.M., at 13, Upper Wimpole-street, in aid of the "Music in War-time" Fund. The tickets, 5*s.* each, will include tea, and payments received in excess of the price of tickets will go to sufferers from the loss of the *Lusitania*. The artists include Madame Amina Goodwin, Miss Cecilia Gates, Miss Adelina Leon, and Mr. Edward Halland.

New Inventions.

A SELF-RETAINING BLADDER RETRACTOR.

THE efficient exposure of the interior of the bladder is the key-note to modern operations on that viscus. Some years ago I introduced a bladder retractor ("Genito-Urinary Surgery," Messrs. Cassell and Co.) with an easily grasped handle which gave a maximum exposure of the interior of the bladder for the size of the abdominal incision. In order to diminish the amount of assistance required at operations on bladder growths I have had the blades of the bladder retractor fitted on an abdominal frame so that they can be slipped into the cavity of the bladder, separated, and remain in place, retract the abdominal wall, and hold the lateral walls of the bladder well apart. The blades are detachable; so that a small or large size blade may be used, as the exigencies of the operation demand. A third blade is attached by means of a screw to the transverse base of the frame. It is movable in an antero-posterior direction and serves to push back the posterior wall of the bladder.



The instrument, which is shown in the illustration, is made by Messrs. Allen and Hanburys, Limited, Wigmore-street, London, W. It has been in use for two years, and has been proved to be highly efficient.

J. W. THOMSON WALKER, F.R.C.S. Eng.

Queen Anne-street, W.

(1) ELECTRICAL STERILISER; AND (2) ELECTRICAL COOKING APPARATUS.

THE utilisation of electric energy for general heating purposes is rapidly being brought into line with economic considerations. The principle, of course, was established long ago, but the problem has been to render the system available for practical purposes at a cost consistent with that entailed by existing methods. A very important advance in this direction has been made by the resistance system introduced by Mr. R. F. Venner, of the Venner Electrical Cooking and Heating Appliances Co., Ltd., of Venelectric Works, Wandsworth-road, London, S.W. In using what may be called naked resistances, which amount to coils of red-hot wire, there is an obvious loss of heat in many ways. One requirement is to insulate the resistances effectively against loss by radiation and at the same time to secure their heat for the given purpose. Further, it is desirable not only to utilise this heat, but to distribute it uniformly. Mr. Venner effects this by immersing the resistance coils in a specially prepared heavy petroleum oil. It is as though the filament of an ordinary electric incandescent lamp were submerged in oil, which would prevent its getting red-hot, but at the same time the oil would reach a temperature sufficiently high for cooking or other purposes. The oil must be capable of resisting carbonisation or charring, a negative quality which is obtained by selecting an oil that has received a special preparatory process. It only remains, therefore, to construct a suitable container jacketed with this oil in which the resistance coils are immersed. This container can take the form of a sterilising tank, a grilling pan, a kettle, a roasting chamber, and so forth. The thermal efficiency of the steriliser has been certified to be 82·6 per cent., while the value of the resistance shows no impairment even after running continuously for 100 hours. In hospital practice this steriliser is of the greatest convenience.

We have made a personal trial of the silver grill and the results are very satisfactory. The heating efficiency is reached in two and a half minutes and then a chop, steak, egg, or slice of ham can readily be cooked in a surprisingly short time. The cooking is effectively done, the contact with the hot plate causing coagulation of the albumins so that the juices are retained, with the result that meats are tender and appetising. It makes omelettes perfectly, and a sole fried by this method is most attractively cooked. In one experiment 3 lb. of steak were cooked in 9½ minutes, the current taken being 71·25 watts, which at the rate of 4½*d.* per unit costs about ⅓*d.*; in another experiment 2½ lb. of kidney and mushrooms were grilled in 6½ minutes with a consumption of 54·16 watts, the cost of which, on the same basis of charge, would be less than ¼*d.* The introduction of this method marks a considerable advance in the application of electricity to cooking purposes on the score of both economy and efficiency. The grill can be used in any room of the house in which there is an electric lamp, obviously a convenience in a time of sickness or emergency.

A MONTHLY RECORD OF ATMOSPHERIC POLLUTION.

COMMITTEE FOR THE INVESTIGATION OF ATMOSPHERIC POLLUTION:

Summary of Reports for Month ending Feb. 28th, 1915.

1	2	3	4	5	6	7	8	9	10	11	12
			Metric tons of deposit per square kilometre during month.								
			Insoluble matter.			Soluble matter.			Included in soluble matter.		
Place.	Correspondent.	Rainfall in millimetres.	Tar.	Carbonaceous other than tar.	Ash.	Loss on ignition.	Ash.	Total solids.	Sulphate as (SO_4).	Chlorine (Cl).	Ammonia (NH_3).
ENGLAND—											
Birmingham, Central ...	Dr. J. Robertson, M.O.H.	89	0·19	3·04	7·57	1·60	5·80	18·20	3·60	0·60	0·07
„ Aston	„	83	0·09	2·55	7·76	1·40	4·80	16·60	3·10	0·40	0·04
„ S.W.	„	99	0·05	0·52	1·33	0·70	2·30	4·90	1·00	0·40	0·03
Bolton	Dr. J. E. Gould, M.O.H.	114	0·05	1·24	3·29	3·63	8·63	16·82	5·00	2·05	0·08
Exeter	Mr. F. Southerden.	138	0·03	1·41	2·63	2·66	4·49	11·22	2·57	1·24	0·05
Kingston-upon-Hull	Mr. A. R. Tankard, Public Analyst.	79	0·05	2·02	4·13	2·53	5·07	13·80	2·61	0·76	0·07
Liverpool	Dr. E. W. Hope, M.O.H.	62	0·25	1·70	5·15	2·24	5·62	14·96	2·83	0·82	0·12
London—											
Meteorological Office ...	Director, THE LANCET Laboratory.	72	0·10	0·05	2·66	2·78	5·18	11·00	2·30	0·33	Traces.
Embankment Gardens...	Mr. J. Ollis, Chief Officer, Public Control Department, L.C.C.	74	0·50	4·16	10·70	2·07	8·45	25·88	3·42	1·92	0·08
Finsbury Park...	„	78	0·12	1·52	4·92	0·31	5·77	12·64	2·37	0·66	0·03
Ravenscourt Park	„	65	0·04	1·16	3·81	1·68	3·50	10·19	1·94	0·64	0·08
Southwark Park	„	79	0·04	2·03	4·94	0·63	5·69	13·35	3·02	0·78	0·05
Wandsworth Common ...	„	39	0·00	0·39	1·75	1·95	4·92	9·01	2·94	0·58	0·03
Victoria Park	„	68	0·03	1·60	4·28	1·22	6·21	13·34	3·15	0·67	0·05
Golden Lane	Dr. W. J. Howarth, M.O.H	80	0·08	3·04	5·21	3·54	7·08	18·94	4·74	1·26	0·19
Malvern	Mr. W. Osborne Thorpe, Engineer U.D.C.	57	—	0·08	0·17	0·57	0·90	1·72	0·41	0·28	0·01
Manchester—											
Ancoats Hospital ...	Mr. J. Warrington, Secretary, Air Pollution Advisory Board.	71	0·11	3·65	9·40	1·82	7·83	22·81	4·33	1·09	0·08
Bowdon	„	68	0·01	0·29	1·14	0·70	2·52	4·66	1·33	0·51	0·05
Cheadle	„	53	0·06	0·95	2·53	1·03	2·04	6·61	1·35	0·60	0·05
Davyhulme	„	60	0·01	0·86	4·05	1·03	4·29	10·24	2·36	0·78	0·10
Fallowfield	„	57	0·04	1·12	4·97	0·71	3·63	10·47	2·46	0·39	0·04
Moss-side	„	65	0·12	1·54	5·23	1·36	5·53	13·78	2·87	1·04	0·07
Philips Park	„	62	0·06	2·96	6·75	2.13	6·95	18·85	3·63	1·69	0·04
Queen's Park	„	68	0·07	1·51	6·52	1·36	7·19	16·65	3·77	1·29	0·04
School of Technology ...	„	64	0·07	2·19	4·96	1·17	5·34	13·73	2·75	1·05	0·05
Whitefield	„	86	0·03	1·37	5·42	0·89	5·99	13·70	3·44	0·90	0·06
Newcastle-on-Tyne	Dr. H. Kerr, M.O.H.	65	0·09	3·25	5·72	2·47	5·06	16·59	2·86	0·64	0·18
Oldham	Dr. J. B. Wilkinson, M.O.H.	105	0·44	9·57	17·40	3·78	9·68	40·90	4·21	1·34	0·16
Sheffield—											
Attercliffe Burial Ground	Prof. W. P. Wynne, The University.	77	0·19	3·20	7·07	2·30	6·26	19·02	2·66	1·94	0·10
Hillsborough Park	„	75	0·11	1·48	4·43	1·50	4·21	11·73	1·90	0·70	0·04
Meersbrook Park	„	85	0·08	1·34	3·38	1·50	4·08	10·38	2·53	0·80	0·05
Weston Park	„	72	0·09	0·94	2·11	1·61	3·16	7·91	2·13	0·64	0·05
York...	Dr. E. M. Smith, M.O.H.	62	0·10	1·50	3·53	1·25	3·49	9·86	2·37	0·71	0·55
SCOTLAND—											
Coatbridge*	Mr. A. G. Dutch, Chief Sanitary Inspector.	—	—	—	—	—	—	—	—	—	—
Greenock	Mr. J. Devine, Sanitary Inspector.	209	0·12	3·53	6·38	3·23	5·58	18·86	3·31	0·90	0·24
Leith	Mr. Thomas Bishop, Sanitary Inspector.	36	0·07	0·92	3·07	2·02	2·75	8·83	1·34	0·32	0·11
Paisley	Mr. W. W. Kelso, Sanitary Inspector.	140	0·28	3·02	4·65	4·46	4·47	16·88	2·64	0·47	0·10
Stirling	„	147	0·45	1·41	3·44	1·97	3·98	11·25	2·96	0·10	0·20

* Record lost.

Col. 4 includes all matter insoluble in water but soluble in CS_2. Col. 5 includes all combustible matter insoluble in water and in CS_2. Col. 6 includes all earthy matter, fuel, ash, &c. One metric ton per sq. kilometre is equivalent to: (*a*) Approx. 9 lb. per acre; (*b*) 2·56 English tons per sq. mile; (*c*) one gramme per sq. metre; (*d*) 1/1000 millimetre of rainfall (see Col. 3).

The analytical work involved in these returns was undertaken respectively by J. F. Liverseege, F.I.C., Birmingham; Harry Hurst, B.Sc., F.I.C., Bolton; F. Southerden, B.Sc., F.I.C., Exeter; A. R. Tankard, F.I.C., Kingston-upon-Hull; W. H. Roberts, M.Sc., F.I.C., Liverpool; S. A. Vasey, F.I.C., Director, THE LANCET Laboratory (London Meteorological Office collections); J. H. Coste, F.I.C. (Embankment Gardens, Finsbury Park, Ravenscourt Park, Southwark Park, Wandsworth Common, Victoria Park collections), London; F. L. Teed, D.Sc., Golden-lane, London, E.C.; C. C. Duncan, F.I.C., Malvern; E. Knecht, Ph.D., M.Sc., Ancoats Hospital, Bowdon, Cheadle, Davyhulme, Fallowfield, Moss-side, Philips Park, Queen's Park, School of Technology, Whitefield (Manchester collections); J. T. Dunn, D.Sc., Newcastle-on-Tyne; Samuel Urmson, Oldham; Professor W. P. Wynne, Attercliffe Burial Ground, Hillsborough Park, Meersbrook Park, Weston Park (Sheffield collections); S. H. Davies, M.Sc., York; Messrs. R. R. Tatlock and Thomson, Coatbridge; Messrs. J. W. Biggart, F.I.C., and McCowan, Greenock; A. Scott Dodd, B.Sc., F.I.C., and R. M. Clark, B.Sc., Leith, Stirling, and Paisley respectively. The correspondents referred to in col. 2 are for the most part public health authorities.

THE LANCET.

LONDON: SATURDAY, MAY 22, 1915.

The Report of Lord Bryce's Committee.

The committee appointed by the Government in December to examine into the charges of outrage and cruelty which had been made against the soldiers of Germany from the very first days of the war made its report last week too late for notice in our columns.[1] The medical interest of the document is very great in several directions, while the composition of the committee gives particular force to its conclusions, for it was exceptionally fitted to discharge its task. No political element could afford any ground for the suggestion of bias in one direction or another. The name of its chairman, Lord Bryce, was known and honoured throughout the world, in enemy countries as well as in those of neutrals and at home. The four King's Counsel among its members comprised men of such divergent aims and attainments as Sir Frederick Pollock and Sir Edward Clarke, and the inclusion of Mr. H. A. L. Fisher and Mr. Harold Cox showed that the necessity for judging present acts by the light of history had not been forgotten. The report of such a body will carry weight now and hereafter, and will be closely studied not only in the countries at war but in those which have remained interested and critical spectators of the struggle. And its particular value is that its revelations, appalling as they are, will serve to steady our emotions at a moment when national feeling is at fever heat and when exaggeration is apt to colour stories which pass from mouth to mouth, and when invention with but a slender foundation of fact often obtains currency more readily than plain truth. There have been exaggerations and flat lies in connexion with the war, and rumours upon many subjects have been proved false or have died for lack of corroboration. (We might cite the stories of Russian reinforcements from Archangel as an instance of what rumour can achieve when once a story is set in motion.) And in the matter of German outrages there have been misstatements. There are not in this country, as was at one time declared, thousands of young Belgian girls expecting to become mothers as the result of rape by the soldiers of the enemy, any more than there are thousands of English girls pregnant as the result of our own soldiers' licentiousness. But the sifting of the evidence with regard to German atrocities has produced a record of villainy which will reduce to their proper value the vapourings of those who regarded all stories of inhumanity in the foe as idle libels. The world now knows a good deal of the truth.

Such a report as that issued by Lord Bryce's committee dispels rumour and exaggeration, substituting facts horrifying enough in themselves to require no admixture of fiction to render them more terrible. Murder, rape, and robbery have been committed throughout the areas invaded by the enemy, and these crimes have not been sporadic manifestations of the awakening of brute passions in undisciplined soldiery inflamed by war and conquest, but have been in many instances the result of deliberately sanctioned terrorism, planned with a view to subjugating the countries attacked and those defending them. These crimes have been committed by the most rigorously and meticulously disciplined army that the world has ever seen, and their cruelty has been carried to an excess which the world has not felt since it has boasted itself civilised. This is the gravest part of the charge now proved against our enemy; that those in high authority inculcated the practice of barbarous outrages in soldiers whom they provided with ingeniously devised contrivances for spreading fire in buildings, as they have since armed them with even more ingenious equipment for carrying and releasing poisonous gases. This portion of the damning charge is proved beyond any room for doubt, not only by witnesses deposing to the speeches of German officers who justified their acts by alleging the orders of their superiors, but by documentary evidence of various kinds of unquestionable authenticity, convicting the accused by their own confession. It is not necessary to give extracts here from the evidence. The document has been read by many, and will shortly be familiar to all, as the Government proposes to issue it publicly at a nominal price. But we wish to insist on the manner in which the evidence has been collected and sifted by the committee, in order to show that nothing has been allowed to pass which could be characterised as dubious or incapable of proof. The committee itself admits in its report, which is unanimous on all points, that it "began the inquiry with doubts whether a positive result would be attained. But the further we went and the more evidence we examined so much the more was our scepticism reduced." In another passage dealing with this topic we are told: "The force of the evidence is cumulative. Its worth can be estimated only by perusing the testimony as a whole. The experienced lawyers who took the depositions tell us that they passed from the same stage of doubt into the same stage of conviction." That "shadow of reasonable doubt" with which we are familiar in our courts of criminal jurisdiction finds no place when we study the broad outlines of the report. Assassination, lust, and pillage have prevailed over many parts of Belgium on a scale unparalleled in any war between civilised nations, and no military necessity can be alleged in defence or extenuation of the outrages thus committed.

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[1] Alleged German Outrages: Report of Committee. 3d. Appendix, 2s. 1d. London: Messrs. Eyre and Spottiswoode, Limited; Messrs. Wyman and Sons.

There is one breach of those rules of civilised warfare that are sanctified by usage and rendered definite by signed convention to which special reference may appropriately be made in these columns. The committee found a difficulty, inherent to the circumstances of the act, in establishing the intention of firing upon hospitals, ambulances, and stretcherbearers, where the firing was conducted at long ranges. It therefore declines to declare that there is proof of this crime, merely pointing out that military observers believe that it took place, and that in the case of ambulances explicit evidence exists. Abuse of the Red Cross by the enemy was, however, found capable of more direct establishment. This abuse, according to witnesses, consisted of the opening of fire sometimes at close range with machine guns disguised in ambulances, and a case is described in which there is little room to doubt that a Red Cross motor-car was used to carry ammunition under the command of officers. It is observed that "unless all these statements are wilfully false, which the committee sees no reason to believe, these acts must have been deliberate, and it does not seem possible that a Red Cross car could be equipped with a machine gun by soldiers acting without orders." From the closing remark of this passage none will dissent who remembers that the German army conducts its operations under the strictest discipline applied to the minutest details. The abuse of the Red Cross is a crime of warfare the stain of which will never be effaced.

Deep and burning indignation will be aroused in those who read the story told in dispassionate language by the committee. The acts recounted have inflamed the anger of those actually engaged in fighting to a degree of bitterness of which they would once have believed themselves incapable. These, however, in many cases have been eyewitnesses of that which they are not likely to forget, and they have the perpetrators before them. For us at home there remains the duty to possess our souls in patience and to contribute in every way in our power to the bringing of the war to that conclusion which will ensure the meting out of justice to the wrongdoers and the establishment of lasting peace. We shall in no way aid in the attainment of that end by indulging in frothy ebullitions of rage, in rousing the passion for mischief in persons naturally unruly and excitable, or in calling for "reprisals" against those who have neither done nor ordered the acts which are the cause of our anger. We can express no sympathy with those who recently have wrecked shops in London and elsewhere, and pursued aliens believed to be Germans in the streets. Deeds of this kind, carried out principally by women and boys, can have no effect upon the course of the war, and the men taking part in them would do better by exhibiting their fighting qualities, if they have any, in the ranks of the army. On the desirability of interning Germans or of preventing by law the carrying on of their businesses we offer no opinion. It is outside the province of THE LANCET to do so. Rioting against them is a different matter, and we protest against public exhibitions of excitement as mentally and morally demoralising to those indulging in them, and as likely to lose us the reputation for sober sense and steadfastness upon which as a nation we have long prided ourselves. It is by their enduring steadfastness that our soldiers have earned undying fame during months of trench warfare. It is for us to emulate them in their dogged determination, and to support them by every means in our power. Attention must not be diverted to anything that is irrelevant to the great matter that we have in hand. Riots, shouting, and displays of temper will help us not at all, nor will the discussion of plans for the punishment of those responsible for the crimes revealed in the report of Lord BRYCE'S Committee. Our aim and that of our Allies is to prevent the recurrence in the world's history of the horrors amidst which we now move.

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The Medical Research Committee and the War.

AN interim report has been issued on the special work in connexion with the war which is being undertaken by the National Health Insurance Medical Research Committee. The report is addressed to Mr. MONTAGU, chairman of the National Health Insurance Joint Committee, and gives a very interesting résumé of the special activities of the Research Committee which have had their outcome in the war, and which, it should be understood, have been additional to previously organised schemes of research. It was foretold that the value to the country of the Research Committee, with its regular income and strong scientific staff, would surely prove to be high; in wholly unlooked-for circumstances the surmise has proved to be correct.

There are two main directions in which the Medical Research Committee are labouring as a result of having placed their services at the disposal of the War Office, and both are sure to be of great utility to the country immediately and to pathologists and statisticians later. The committee are undertaking, first, the compilation and analysis of the medical statistics of the sick and wounded from the military forces; and, second, the assisting of the military hospitals in this country to carry on the pathological side of their work efficiently. The whole resources of the statistical department of the Committee are now available for the purposes of the war. The compilation of the statistics of our sick and wounded is under the direction of Dr. JOHN BROWNLEE, who, with Colonel H. P. W. BARROW, R.A.M.C., and Colonel W. N. BARRON, R.A.M.C., it may be remembered, has become responsible for the statistical section of the official medical history of the war. A proper statistical investigation dealing with the sick and wounded, even among the British soldiers only, in this gigantic struggle will furnish lessons for the future of the highest importance. The circumstances of the war have been and are in many respects unprecedented, and we may receive specially significant information from the statistical analysis of the casualty and sickness lists; apart from which our previous wars have been so badly chronicled from the medical point of view that much general instruction to be gathered from the figures will be new to us. Similarly the assistance which the Medical Research Committee have been able to offer to military hospitals in respect of their pathological departments has not only been of great practical service in the care of our sick and wounded, but is likely to have far-reaching results. In some of the places where medical officers, having commissions, have been appointed to pathological posts, the Medical Research Committee have made grants for the supply of apparatus such as would not necessarily be found in the ordinary equipment of a hospital; to other military hospitals grants have been made for the appointment of part-time pathologists, not having commissions, whose work can in some cases be carried out in an adjacent laboratory belonging to a university or a municipal authority. In some cases the Medical Research Committee have equipped laboratories within military hospitals for the purpose of routine work or special inquiry. The work here done in collaboration with the Royal Army Medical Corps, whose scientific status is now so good, and whose achievements throughout the war have been recognised as a feature in our military successes, is bound to throw light upon many difficult problems in preventive medicine and therapeutics.

Among the special inquiries which the Medical Research Committee are employed upon may be mentioned the study of epidemic cerebro-spinal meningitis, which is being undertaken under the direction of Dr. M. H. GORDON, who has received a commission as a major in the Royal Army Medical Corps, and who has a central laboratory at the Army Medical College, Millbank, where the Committee provide him with two assistants. Research in the same direction in many provincial laboratories is also being subsidised. The services of the bacteriological department of the Committee, which is under the direction of Sir ALMROTH WRIGHT, have been applied to purposes of military significance, while it is well known that at the outbreak of the war Sir ALMROTH WRIGHT and his staff gave the whole of their time to the preparation of vaccines for the army in the inoculation department of St. Mary's Hospital. We publish elsewhere in full the interim report of the Medical Research Committee, which tells its own story of multifarious industry, and feel sure that no medical man can read it without seeing how fitting an adjunct to the labours of the Royal Army Medical Corps the Committee are proving themselves to be.

Annotations.

"Ne quid nimis."

THE LATE MADAME DEPAGE.

IT is felt that the tragic death of Madame Depage, to which reference was made in our columns last week, should not be allowed to pass without some demonstration of the admiration that is felt for her character and of sorrow for her tragic fate while engaged on an errand of mercy. Madame Depage had many friends who were deeply attached to her both here and in the United States, and it is thought that they might like to give expression to their feelings by subscribing to a small bronze memorial to be placed in the Depage Hospital at Brussels after the war. The memorial might be executed by some of the distressed Belgian art metal-workers who are now in exile. Subscriptions will be gladly received by Mr. Robert Jones, 11, Nelson-street, Liverpool; by Mr. D'Arcy Power, 10A, Chandos-street, Cavendish-square, London; or by Professor Sinclair White, Ranmoor, Sheffield.

THE TREATMENT OF THE ATONIC WOUNDS OF WAR.

AT a recent meeting of the Société Médicale des Hôpitaux of Paris M. François Debat described a simple and effective method of treating the wounds of war which resist ordinary methods and remain atonic or even degenerate into ulcers. Our Paris correspondent has already referred briefly to the treatment as being satisfactory. The wounds in which it was employed were usually not deep. At first they showed nothing particular and then the following obstinate condition gradually developed. The wound became violaceous and its surface smooth or mammillated with soft granulations, the borders punched out or nodular. There was an abundant serous or purulent discharge. Sometimes a thin violaceous cicatrix formed at certain points with little power of resistance. In other cases the ulcer increased in depth and extent. This complication usually occurred in soldiers who were debilitated, fatigued, or addicted to alcohol, but sometimes was observed in young, robust, and sober men without specific or tuberculous history. Atonic wounds showed a predilection for certain situations—the backs of the hands and feet, the inner surface of the arm, and the antero-internal surface of varicose legs. They were never observed on the face or the plantar or palmar regions. Ordinary treatment was of no use. Antiseptics only irritated and destroyed the tissues. Moist dressings macerated the surrounding integument and provoked dermatitis and folliculitis. Dry dressings adhered to the wound and formed a crust under which suppuration spread downwards. In many cases, after two or three months' treatment, the condition was worse than ever. The localisation of the wounds gave the key to their pathogenesis. As stated, palmar and plantar wounds healed well. Three reasons may be given for this. 1. The thickness of the integuments, particularly of the generating Malpighian layer. 2. The activity of the circulation. 3. The frequency of contraction of the subjacent muscles. In the regions where the atonic wounds occur there are, on the contrary, a thin epidermis, a circulation of little activity, and feeble and infrequent muscular contractions, as the wounded man tends to immobilise the affected limb. The treatment follows. Irritation of tissues with little power of resistance must be avoided. Their activity must be increased by movements and massage. M. Debat eliminates all antiseptics. He applies a light dressing of gauze soaked in saline solution of the strength of 9 per 1000 covered with cotton wool. To prevent maceration he exposes the wound every day to the air and increases the duration of the exposure as the discharge diminishes. The time of exposure is two hours on the first day, and this is increased by an hour daily. When the discharge ceases the saline solution is replaced by a thick paste of oxide of zinc or innotyol. Every hour the muscles subjacent to the wound are moved for five minutes, while the limb is maintained in an elevated position. Every day effleurage of the limb with pinching of the skin around the wound is performed. If the wound is in the lower limb the patient should remain in bed; if in the upper limb he should wear a sling. This simple method had an immediate effect. The following is an example. On Oct. 28th, 1914, a robust soldier, aged 21 years, addicted to alcohol, sustained a superficial wound on the antero-internal surface of the arm in consequence of a shell explosion. The wound was painted with iodine and moist dressings were applied. After a fortnight the wound suppurated abundantly and tended to enlarge. Peroxide of hydrogen, nitrate of silver, iodine, permanganate of potassium, carron oil, and dry dressings were tried in turn. After two months there was no improvement. On Jan. 8th, 1915, the treatment described above was adopted. The movements consisted in pronation, supination, shutting the hand, and flexion of the forearm. After three days the wound was red instead of violaceous, and was granulating, particularly at the borders and lower end. On Jan. 26th healing was complete.

HOW PLAGUE MAY BE CARRIED FROM PLACE TO PLACE.

IT is now generally recognised that plague may be conveyed from port to port or from one continent to another by infected rats which may travel on board vessels, concealed like stowaways among the cargo. Modern preventive measures, therefore, require a careful examination of sacks, crates, boxes, or other packages before they are carried on board ships at the port of departure and again before landing at the place of destination to discover if any rats are concealed in them. Our American contemporary, *Public Health Reports* of March 26th, calls attention to what appears to be an illustrative example of this possible danger. Recently at Seattle, a seaport town situated on Puget Sound, in the State of Washington, on the Pacific coast, a large box of plants arrived from Japan, and on being opened by the State horticulturist a rat was discovered concealed in the soil at the bottom of the box. The animal was at once killed with a stick and the body was handed over to the medical officer of the Public Health Service stationed at Seattle for examination, with the result that it was found to have been suffering from a form of plague. There were two possibilities —namely, that either the rat had entered the box at Yokohama before it was carried on board the ship, or that it had managed to enter the package at Seattle when it was opened by the official appraiser for customs purposes. The experts who inquired into the case came to the conclusion that the affected rat must have entered the box at Yokohama and travelled in it to Seattle. For some time the local rats at Yokohama are known to have been infected by plague, but on the other hand it is equally true that since 1913 plague-infected rats have been found from time to time at Seattle up to the beginning of the present year along the water front. After consideration of the facts we are disposed to agree with the view taken by the Seattle experts that the infected rat was conveyed from Yokohama in the box of plants, and that it was extremely unlikely that it could have managed to find its way into the package during the short examination made by the official appraiser at Seattle. If this view be correct the importance of the case can hardly be over-estimated, for if the box had been consigned to some inland town in the United States where the public health officials were not on the alert, it is more than probable that the infected rat would have escaped to mingle with the local rats, and might have established a fresh focus of plague infection. We understand that the medical officers of the United States Public Health Service have now instituted a systematic examination of all packages coming from infected ports in order to ascertain the relative frequency of such occurrences, so that suitable steps may be taken at Seattle and other ports to prevent any danger that might arise from this cause in future.

THE ASSAY AND PHYSIOLOGICAL VALUE OF MEAT EXTRACTS.

AN interesting discussion on the methods adopted in the estimation of the nitrogenous constituents of extracts derived from albuminous substances, such as meat extracts and similar products, with special reference to the physiological significance of the results, was opened by the chairman, Mr. A. C. Chapman, at a joint meeting of the Society of Public Analysts and other Analytical Chemists and the Bio-chemical Society, held at the Chemical Society's rooms on May 5th. The chairman drew a sketch of the analytical methods in vogue which aimed at separating and estimating such products as gelatine, gelatin-peptone, syntonin, albumoses and peptones, creatin and other meat bases. Dr. F. Gowland Hopkins, in the course of some interesting remarks on the work that was being done on the subject at Cambridge, said—

> The animal body dealt not with the intact proteins or even with the albumoses and peptones, but with the free amino-acids which were the individual constituents of the protein molecule. The actual way in which the different amino-acids were grouped in the protein molecule was not of much consequence, but the effects produced by the individual amino-acids were of extreme importance. He described physiological experiments which he had made showing that when rats were given a diet including a complete amino-acid mixture corresponding to the proteins of an ordinary diet the growth was almost exactly normal, while when arginine and histidine were removed from the amino-acid mixture the growth ceased immediately, being resumed when arginine and histidine were again added. The removal of tryptophane from the amino-acid mixture also produced similar results, and Osborn and Mendel in America had shown cystine to be similarly essential. It did not follow that this was the case with every amino-acid, and the question as to which of the amino-acids were essential in that way offered a large field for investigation. Recent work at Cambridge indicated that certain acids could be removed from the amino-acid mixture without affecting the

rate of growth. With regard to the minimum quantity of any amino-acid required for nutrition, experiment had shown that, in the case of rats, at any rate, the critical minimum for arginine lay somewhere between 2½ and 1 per cent.

It appeared that the functions of the individual amino-acids were not confined merely to flesh formation. The effect of feeding animals on zein, which was deficient in both tryptophane and lysine, was not only to restrict growth but also to shorten the survival, and the same was observed with zein plus lysine; but with zein plus tryptophane the animal was able to maintain its weight for a long period, although it did not grow. It was clear from this that trytophane exercised some other function than the mere supply of material for growth.

Mr. A. R. Tankard thought that it was important in some cases to estimate separately the meat fibre and coagulable albuminoids, with a view to the detection of extraneous matters which were sometimes added. For some time past he had adopted the method of centrifugalising the bromine protein precipitate, mixing the residue with water, and centrifugalising again. He made a practice of separating the albumoses and peptones, but agreed that in most ordinary cases this was of little value. There were, however, on the market certain so-called "fortified" meat extracts which contained albumoses and peptones in very much larger proportion than occurred in ordinary meat extracts.

Dr. Percival Hartley described his experience of Van Slyk's method of determining amino-nitrogen, which was based on the fact that when protein and protein degradation products were treated with nitrous acid nitrogen gas was given off. The results of complete analysis of various proteins showed that the constitution of serum albumin was quite different to that of the globulins, the former containing a much larger proportion of lysine and of cystine than the latter. Another interesting result was that the globulins exhibited no difference in chemical composition—eu-globulin and pseudo-globulin apparently being closely related. Another point brought out was that the free amino nitrogen of native proteins appeared to be approximately one-half of the lysine content which, if substantiated, would appear to afford a simple method of estimating lysine without hydrolysis of the protein. Furthermore, the proportion of free amino nitrogen indicated to what extent the protein had been digested or peptonised.

On the whole the discussion did not throw much fresh light upon the actual value of meat extracts as nutrients. The general impression was derived that there might be activators present in such extracts which were of value in encouraging the assimilation of actual food substances, and so the classical conclusion that meat extracts served as adjuvants or stimulants rather than direct nutritives would appear still to hold the field.

THE REGISTRATION OF PLUMBERS.

THE protracted efforts of the Worshipful Company of Plumbers, no less on behalf of the public health than for the honour of the trade they represent, are slowly bearing fruit. Recently the corporation waterworks of the county borough of St. Helens issued a regulation to the effect that for the protection of the water-supply, and in the interests of the consumers, it is essential that all plumbing work should be well and soundly executed; and in order to ensure the employment of none but good workmen a register of plumbers will be kept in the office of the water department of the corporation, on which may be enrolled any plumber carrying on business within the limits of the water-supply who shall satisfy the water committee and the engineer in all respects as to his competency, and who shall sign an agreement to conform to and comply with the by-laws relating to water-supply. No other person will be recognised as an authorised employee. Still more recently, on April 24th, the annual general meeting of the Incorporated Joint Committee on Water Regulations was held at the London Guildhall, at which was passed a resolution approving the principle of "raising the qualification of plumbers employed on water fittings, and calling on water authorities to recognise and require as far as possible the employment of plumbers qualified and responsible for the efficiency of their work by having passed a theoretical and practical examination, such as that conducted by the General Council for the National Registration of Plumbers, which is constituted of representatives of master plumbers, operative plumbers, and authorities connected with public health." It was further recommended that where there was not a sufficient supply of plumbers possessing the necessary qualification the water authorities should obtain information from the plumbers of the locality as to the reason for the apparent insufficiency and the possibility of increasing the number of properly qualified men. It is hoped that regulations such as the above will influence all plumbers to bestir themselves with a view to obtaining some certificate as to their competency. Hitherto the majority of plumbers, we regret to say, have abstained from registration, finding themselves able to obtain employment without payment of the annual 5s. fee necessary for registration. While this narrow attitude continues the public are left without any guarantee of the workman's ability to execute properly the work which he undertakes, and bad results to the public health follow.

THE PHYSIOLOGICAL SIGNIFICANCE OF REFLEX PHENOMENA IN SPASTIC PARALYSIS OF THE LOWER LIMBS.

THE elaborate observations reported by Dr. R. Walshe in *Brain* (1914, Vol. XXXVII., p. 269) is of much more than passing interest. They are of high clinical and diagnostic importance; they instance, too, a striking example of the value to clinical medicine which apparently purely physiological data can afford. Professor C. S. Sherrington's researches upon the "spinal" and the "decerebrate" animal form the starting-point. It has been shown by him that there are two separable systems of motor innervation which control two sets of musculature. One system exhibits those transient phases of heightened reaction which constitute reflex movements, well exemplified in the protective reflex of flexion following a nocuous stimulus to the sole of the foot; the other maintains that steady tonic response which supplies the muscular tension necessary to attitude, and which is mainly evidenced in the extensor group of muscles. These two systems, moreover, coöperate, exerting influences complemental to each other. Does this system of innervation apply in man? Dr. Walshe brings forward what appears to us to be convincing evidence that it does. He recognises, with Babinski, two forms of spastic paraplegia: one "in flexion" when the limb or limbs become flexed, and the other "in extension" with the limb extended. In paraplegia with flexion one has muscular rigidity in flexion, profound loss of voluntary power, diminished or absent tendon-jerks, and exaggeration of the defence reflexes and extensor response (the Babinski sign, which Dr. Walshe argues is a definite part of the flexion reflex). Such a form of paraplegia is met with especially when there is local and extensive cord damage, when, it is suggested, not only the pyramidal tract but the lateral columns also are affected. In a pure pyramidal lesion, such, for example, as hemiplegia, there is, on the contrary, always paraplegia in extension, not in flexion. Now, flexion paraplegia, on account of the loss of knee-jerk, which represents the degree of extensor tonus, indicates interruption of those motor channels concerning such tonus, and since this interruption never occurs in pure pyramidal lesions it is argued that such channels pursue an extra-pyramidal course. Flexion paraplegia in fact corresponds to Sherrington's "spinal" animal, in which the cord is definitely interrupted. Extension paraplegia presents a different condition. There is here the exaggerated knee-jerk; there is, that is to say, evidence of heightened extensor tonus, and such a condition corresponds to Sherrington's decerebrate rigidity. Now, the same condition follows, experimentally, section of the brain-stem above the level of the pons, but not so far forwards as the forebrain. The centre controlling this extensor reflex lies probably near the paracerebellar nuclei. In animals, therefore, it is suggested that of the two reflex centres controlling flexor responses and extension tonus respectively that subserving flexion rests in the cord, and that preserving tonus in the extensors rests in the brain at the site suggested. A pure spinal lesion generally causes flexion paraplegia, for here the tracts for extensor tonus are usually involved as well as the flexion "spinal" centre. A cortical lesion, such as hemiplegia, representing a pure pyramidal lesion, always causes extension paraplegia, for here the paths for extensor tonus are not interfered with; the tonus is, indeed, heightened. This increased tonus may modify the character of the reflexes of its antagonistic muscles, the flexors, where the crossed extensor response is only obtained in such conditions. Disturbance of sensation appears to influence hardly appreciably the form of these reflexes. The investigations have been followed in some cases by means of graphic records of the tendon-jerks. The analogy between events as seen in the experimental animal and those furnished by pathological conditions in man is thus of striking significance, and the power of diagnosis is materially aided by this "lift up" from the physiological laboratory.

INSANITY CLAIMED TO BE DUE TO MINERS' NYSTAGMUS.

THE causation of insanity is a wide subject, which it would be impracticable to endeavour to reduce to fixed or specific limits by the definite inclusion of certain factors and the rigid exclusion of others. At the same time, if attention is devoted to what may appear the most prominent incident in the previous history of a case, and a proportioned estimate of the action of less obvious but at least equally potent factors is not made, there is grave risk of misconception and of erroneous judgment. Nothing is more clear in discussing the incidence of insanity than the fact that the soil from which mental disease springs is prepared by the inheritance of the individual, and the task of assigning relative importance to the various elements that must be regarded in any particular case of insanity is one demanding careful and mature consideration. In a recent case under the Workmen's Compensation Act nystagmus was claimed to be the cause of the insanity of the individual whose case was under adjudication. The Navigation Coal Company was sued by the widow of Walter Jones, a coal miner, for compensation in respect of the death of her husband as being due to nystagmus contracted when in the company's employment. The facts are briefly as follows. The deceased contracted miners' nystagmus and received compensation for a time. He subsequently took the position of steward to the Merthyr Vale Hibernian Club, and performed his duties to the satisfaction of the club. Later, however, he became obsessed with the idea that he was not doing his work satisfactorily, and he resigned. The club persuaded him to withdraw his resignation, but he resigned again, and this time his resignation was accepted. Before his notice expired he committed suicide on the railway, the coroner's jury returning a verdict of "Temporary insanity." In order to establish her claim for compensation the widow had to show that her husband's death was caused by nystagmus, which it will be remembered, is a disease included in Schedule III. of the Act of 1906. Evidence was called to establish the claim that his depression and suicide were the consequences of the disease which he had contracted. Judge Bryn Roberts, however, regarded the chain of causation as insufficiently demonstrated, and the widow's application was refused. Time and custom have sanctioned the division of etiological factors into "predisposing" and "exciting," and no physician will emphasise one at the expense of the other, for the operation of each is of significance. Of the predisposing factors in the case under consideration no information seems to be forthcoming, but assuredly they cannot be ignored, and whether predisposing factors are matters for compensation is too debatable a subject to be decided by mere *ex cathedrâ* statements. On the other hand, it can be understood that, where the soil is already prepared, the existence of such a physical defect as miners' nystagmus might become a veritable obsession in a particular case, and originate a train of morbid mental processes which might end in the commission of suicide. In a sense, therefore, it can be regarded as an exciting cause. Whether it was the only exciting cause in the present case is quite another matter, and, as already remarked, the part played by predisposing factors may be of equal, if not greater, importance. To assign compensation by singling out one only of a number of pre-existing morbid agencies at the expense of the others would be unjustifiable from the medical point of view, and equally unwise. The judge's decision that the chain of causation in this particular case was incomplete is one which we think expert opinion in regard to the causation of insanity will uphold.

THE VALUE OF ATOPHAN IN GOUT.

SOME observations on the use of this drug, which is a diphenyl-chinolin-tetracarbonic acid, have been recently published by Dr. P. Biffis in *Il Policlinico*. He administered it to five healthy and two gouty subjects in half-gramme doses two to eight times daily, the latter being on a rigorous purin-free diet. In the healthy subjects there was a definite increase in the uric acid eliminated by the urine, which generally reached its maximum in the first six hours, after which it diminished even though the dose was trebled or quadrupled. The increase was not in proportion to the amount of drug given after the first day, even if the experiment were made in the same individual at different times, and when the administration was suspended there was a diminution, sometimes very marked, in the quantity of eliminated uric acid which continued for two to three days. There was no change in the quantity of urine passed, but it became slightly turbid and high coloured and gave a sediment of urates and uric acid, and a trace of albumin was frequently observed. In large doses it was not well tolerated, causing pyrosis, which was not relieved even by full doses of bicarbonate of soda; this digestive disturbance was not nearly so frequent when novatophan was substituted for atophan. In the two gouty cases the drug was not given in the acute stages, and, taken in conjunction with other observations previously made by him, the author came to the conclusion that the drug was much less active with regard to the elimination of uric acid in gouty subjects than in healthy. It had hardly any action in doses of 1–2 grammes, and this may be why some observers have reported unfavourably of the drug. The inertia can perhaps be explained by the fact that atophan acts rather upon the elimination of exogenous uric acid and is therefore less active in gouty subjects on a diet free from uricogenous substances. With regard to the quantity of urine, the tolerance, and the albuminuria, the same phenomena were observed as in the healthy subjects. The action of atophan is little understood, but it probably consists in the decomposition of a larger quantity of nucleoproteids or in some alteration in those fermentative processes which regulate the oxidation of the purin bases.

PAINLESS LABOUR.

IN a recent issue of *La Clinica Ostetrica* Dr. E. Curti gives his experiences of 25 cases of labour in which he used a modification of scopolamine narcosis. Instead of the morphine with which this drug is usually associated and which has been blamed for some of the untoward results following its use, he had the idea of combining it with narcophine, a substance which is a synthetic double salt of morphine and narcotine having the chemical formula $C_7H_4O_7$, $C_{17}H_{19}NO_3$, $C_{22}H_{23}NO_7 + 4H_2O$. This substance is a white powder, soluble in water, and possesses the narcotic efficacy of opium without its toxicity. Its action is slower but more lasting than that of morphine, while its use is not followed by nausea. The technique employed by Dr. Curti was to give half-hourly injections commencing with scopolamine gm. 0·00045 (about 1/150th grain), with narcophine gm. 0·03 (about ½ grain). The second dose consists of scopolamine 1/200th grain alone, the third of the same quantity with the above dose of narcophine, the fourth of scopolamine alone, and so on alternately. The first injection was given as soon as the cervix was nearly fully dilated. Dr. Curti never found that the injections were followed by either nausea or vomiting, headache or giddiness. The patients felt well and were not fatigued, neither were there any hæmorrhages or other complications in either mother or child. The narcosis obtained is not complete, the mental faculties not being suppressed, but sensation is blunted and it is possible to administer food and medicine. Labour was never retarded and instrumental delivery, when it occurred, would have been necessary even without this narcosis, which is a great boon to a practitioner when single-handed. The duration of the narcosis after delivery varied, and depended partly on the number of injections and partly on the amount of blood lost during labour. Replying to the query whether the narcosis is due to the scopolamine or the narcophine, Dr. Curti's experience is that narcophine alone causes drowsiness but that large doses are required to overcome the labour pains, and with such doses probably uterine contractions would be diminished in intensity. The combination, however, with scopolamine enables smaller doses of narcophine to be used and produces sleep of short duration, together with almost complete cessation of the pain and abolition of full consciousness of what is taking place.

HOSPITALS AND RATES.

THERE is no encouragement to hospital governors to enlarge or even modernise their institutions if the case of the Royal West Sussex Hospital at Chichester can be taken as a test. Although no extra accommodation has been provided in bringing the institution thoroughly up to date, the local assessment committee has so increased the ratable value that the governors are called upon to pay annually on account of rates £80 more than hitherto. There may be strong arguments in favour of the increased assessment, but it seems unreasonable treatment of an institution which is doing thoroughly good work among the sick poor and has readily opened its doors for the reception and treatment of our wounded soldiers. The greater the work of the hospitals generally the less should be the taxes upon them: this would seem to be the more equitable way of regarding the position. Their whole purpose and tendency is to save expense to the community, and what is perhaps more important to improve the race. A very strong point against the increased assessment is that comparing the accounts of the institution at the Sussex cathedral city with hospitals in other comparable towns in no case is it found that such a heavy sum is being paid in rates in proportion to the number of beds. For example, the Royal Sussex County Hospital at Brighton, with nearly 200 beds, is assessed at only £104; the Royal West Sussex Hospital at Chichester, with 60 beds, £280; while the Portsmouth Hospital is not assessed at all, but *receives* £250 annually from the corporation. Further, two-thirds of the income of the Chichester institution are subscribed by those living outside the city borders; of an annual expenditure of £4661, no less than £3496 are spent in the city itself; and of the £16,000 raised to pay for the reconstruction the city subscribed £325, which sum included the bishop's subscription of £100. The complaint of the governors can well be understood, and in the event of relief not being granted there seem to be ample grounds upon which a friendly action might be cited.

THE next session of the General Medical Council will begin on Tuesday, June 1st, when the President, Sir Donald MacAlister, will take the chair at 2 P.M.

THE library and offices of the Royal Society of Medicine will be closed for the Whitsuntide holidays from Saturday, May 22nd, to Tuesday, May 25th, both days inclusive.

MR. J. B. Lawford, we understand, will offer himself again as a candidate for the Council of the Royal College of Surgeons of England, by the desire of his colleagues, as a representative of ophthalmology.

THE *London Gazette* announces that the King has sanctioned the appointment of the King of the Belgians as an Honorary Knight of Justice and of the Queen of the Belgians as an Honorary Lady of Justice of the Order of St. John of Jerusalem in England, and also the promotion of Adeline Duchess of Bedford from a Lady of Grace to a Lady of Justice of the Order.

Lieutenant-Colonel Hugh Jones Roberts, T.D., of Llywenarth, Penygroes, Carnarvonshire, has been appointed a Deputy Lieutenant of the County of Carnarvon.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

The Military Medical Students' Strike at Lahore.

SOME time last year the military students of the Lahore Medical School complained that the uniform worn was unsuitable. This complaint was endorsed by the Principal, considered by the Military Department at Army Headquarters, and certain alterations sanctioned; but owing to the demands of the war the materials necessary to carry them out could not be supplied. The students were also dissatisfied about the rates of scholarship allowances in these times of scarcity. During the visit to the school of Sir Pardey Lukis, the Director-General of the Indian Medical Service, on Feb. 20th, the Principal drew his attention to this matter, and Sir Pardey Lukis gave the representation sympathetic consideration; but on Feb. 22nd the second, third, and fourth year military students decided at a meeting to appear in plain clothes instead of uniform at the classes, contrary to the standing orders. Next day a body of these students were seen by the Principal leaving the hostel in mufti for their classes. They were ordered to appear in uniform before him at 9 A.M., and on doing so were given extra drills for their breach of discipline. The students went back to their boarding house, absented themselves from the classes, and subsequently held a meeting, at which they decided to go on strike. A part of the duty of these military students was the care in hospital of the wounded sepoy patients from the front, and they were also responsible for the unloading of the batches of wounded sepoys as they arrived at the hospital, so that they left the wounded soldiers unattended to, and but for the college students and the civil students of the school, who volunteered for the extra duty, not only must these patients have remained entirely neglected, but it would have been impossible to receive any more. On Feb. 23rd the Principal called on the students for an explanation of their absence from classes. The students stood silent, and they were then asked to take their bedding and leave the hostel for the night. They were told that the matter had been reported to the Director-General of the Indian Medical Service, and that they must await his orders before returning to their classes. They themselves wired to the Director-General and were ordered by him to return to duty, and to submit their grievances through the proper channel. The numbers concerned up to this time were 75 out of 117 military students; the remainder of the 352 students in the school had taken no part in the strike. On Feb. 24th 28 out of the 33 first-year military students joined the strikers, making 103 in all. On Feb. 27th the students on strike were informed by the Principal that the names of all the military medical students who did not return to their classes before 12 noon on March 3rd would be struck off the school rolls, that their scholarships in hand would be forfeited, and that all bondholders would be asked to make good their sureties. Practically none of the students returned by March 3rd, and the orders mentioned above were all carried into effect. In the meantime the Director-General had asked Colonel C. J. Bamber, Inspector-General of Civil Hospitals, to conduct an inquiry into the causes of the strike. After consideration of Colonel Bamber's report the Director-General issued orders that the students must return to duty unconditionally and submit to whatever punishment the Principal might consider it his duty to recommend, otherwise the orders already issued by the Principal, directing the removal of their names from the school rolls for grave misconduct, must hold good and their sureties would be called upon to discharge their bonds and pay up the amounts due. In compliance with these orders 13 students applied for re-admission and were again taken into the military class. The remaining 90 remained out on strike. The Principal then asked permission from the Director-General, I.M.S., to readmit suitable students who might even then apply, and under the orders of the Director-General March 27th was fixed as the latest date for receiving such applications for readmission. As none of the remaining 90 students availed themselves of this further period of grace offered to them by the Director-General they have ceased to have much chance of gaining readmission to the Lahore Medical School. The students apparently contend that they have never been on strike, but have always been ready to return to duty if they were taken back unconditionally and a consideration of their grievances promised. These contentions indicate a fundamental ignorance of the proper relation between pupil and an instructor, and of the requirements of military discipline, to which these students are subject. What else but a strike is persistent refusal to attend classes and carry out allotted duties? So long as the idea persists that in case of a difference of opinion between a professor and his students it is the right of the student to indicate terms to his instructor, such regrettable incidents as this strike are bound to recur.

Town Planning and Sanitation in Bombay.

Professor Geddes, lecturing in connexion with the town-planning exhibition, discussed in some detail the report of the recent Bombay Development Commission. The housing of the people in Bombay, he said, merited the most urgent consideration of the city, and he pointed out the inadequacy of the present rate of progress in regard alike to the decrease of the death-rate and increase of the population. A strenuous and organised civil endeavour was the prime desideratum of the town planning of Bombay. He characterised the planning of *chawls* of the present common type as warehousing the people and not housing them, and insisted that it was not impossible to make a large provision of respectable homes with sufficient playgrounds and not yet exceeding two storeys. Professor Geddes addressed an interested audience, for the public health of Bombay is much discussed just now.

The Bombay Sanitary Institute, which has been established under the auspices of the Bombay Sanitary Association, was recently opened by Lady Willingdon, the wife of the Governor of Bombay, when Dr. J. A. Turner (the medical officer of health of Bombay and honorary secretary of the League) and Lord Willingdon spoke of the establishment of the institute as a step forward in the sanitary education of the city. The Governor congratulated the municipality on what had been done in recent years, and assured them that Government were anxious to assist in every way possible. He thought that owners of property and large employers of labour had great responsibilities, and nothing would give him more satisfaction than to be able to see at the end of his term of office that something really substantial and practical had been done for the poor dwellers in the slums of the city.

Appointments.

Captain F. H. M. Chapman, R.A.M.C., to hold civil medical charge of Rurki, in addition to his military duties, vice Major E. H. Condon, R.A.M.C. Major G. A. Jolly, I.M.S., officiating civil surgeon, Gonda, to hold visiting medical charge of the Bahraich district, with effect from Dec. 21st. Major T. Hunter, I.M.S., civil surgeon, from Muradabad to Naini Tal. Dr. H. A. Macleod, civil surgeon, from Fatehgarh to Muradabad. Lieutenant P. S. Mills, I.S.M.D., officiating civil surgeon, from Mainpuri to Fatehgarh.

April 20th.

BRISTOL AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

University of Bristol: Temporary Residential College.

THE University of Bristol, like most of the modern universities, has been anxiously concerned since its foundation with the question of residential accommodation for its students. Early in its history it received an important benefaction for the accommodation of women students in the shape of Clifton Hill House, to which the adjoining Callander House has since been added. The last 12 months has seen the purchase of the Imperial Hotel and of a large property on Richmond Hill, Clifton, for conversion into halls of residence for men and women training students. The possibility of founding also a residential college near the University for men students generally has engaged the attention of an influential committee, and some progress has been made. The University has taken two houses in Belgrave-road, next to St. Mary's Church, Tyndall's Park, for the purpose of a temporary college. These houses are being renovated and decorated, and will be opened in good time for next term. When the arrangements are complete the temporary college will start with accommodation for 29 students, five in single study bedrooms and 24 in double study bedrooms. It will include also a refectory, a common room, quarters for a warden, and housekeeper's and servants' rooms, as well as bathrooms and offices. There are good-sized gardens at the back of the two houses which may be converted into tennis courts. The new temporary college is situated in a good residential part of the city; it stands high, and is within a few minutes of the University buildings. It is expected that the alterations will be completed in a few weeks' time, when the building will be open for inspection by present and intending students and their parents. The terms for board and residence have not yet been determined, but they will be similar to those charged in the residential colleges of other provincial universities.

Captain Ernest William Hey Groves, R.A.M.C., B.Sc., M.S., M.D.Lond., F.R.C.S.Eng., surgeon to the Bristol General Hospital, has left for the front on his appointment as operating surgeon to the new No. 21 Mobile Base Hospital.

The Late Lieut. Henry Wyndham Goodden, R.A.M.C.

Much regret was felt in Bristol at the news of the death of Lieutenant H. W. Goodden, who has recently been killed in action near Ypres. The deceased was the elder son of Mr. W. C. Goodden, who formerly practised for many years as a surgeon in Bristol. He was educated at Clifton College, and received his medical education at Bristol; he also studied at Paris and Vienna. He graduated M.B. and Ch.B. of Bristol in 1912, and the same year obtained the L.R.C.P. and M.R.C.S. qualifications. Before the outbreak of the war Lieutenant Goodden was senior resident medical officer at the Bristol Royal Infirmary, but almost directly the forces were mobilised he volunteered for active service, and had been at the front for many months. He was attached to the 2nd Battalion Royal Irish Regiment, and had been previously wounded on the Aisne, a cigarette case, it is said, preventing what would in all probability have been a fatal result. Lieutenant Goodden will be much missed in medical circles at Bristol, for he was one of the most popular "residents" ever holding office at the Bristol Royal Infirmary, and much sympathy is felt for his family.

Plymouth Medical Men and Military Service.

A largely attended meeting of medical men was held in Plymouth on May 13th to consider the call of the War Office for whole-time or part-time military service. Colonel Jones, Assistant Director of Medical Services, who had been deputed by the Deputy Director of Medical Services at Salisbury to be present, was in attendance. The chairman, Mr. R. Jacques, remarked that the War Office would receive more applications if commissions were granted in accordance with age and experience. Some medical men stated that they had written to the War Office some time ago, and had heard nothing more of the matter. Eventually it was decided to circularise the local medical profession, and a committee was appointed to consider the replies and suggest what means could be provided for dealing with the practices of those who volunteered for the work.

Hospital Saturday at Plymouth.

May 15th was observed as Hospital Saturday in Plymouth, when a strong appeal was issued to the local working people for the support of the South Devon and East Cornwall Hospital. The institution had a deficit balance of £2430 at the close of 1914.

The Cornwall County Council and the Treatment of Tuberculosis.

At the last meeting of the Cornwall County Council it was decided to purchase Castle-an-Dinas, at St. Columb Major, as a sanatorium for the treatment of tuberculosis, provided the Local Government Board would give financial assistance. The institution will accommodate 60 patients, and is situated on the south side of a hill about 600 feet above sea level. The cost of the scheme is estimated at £8000.

May 18th.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned Staff Surgeons have been promoted to the rank of Fleet Surgeon:—Dated May 15th: Samuel Henry Woods, Percy Temple Sutcliffe, John Percival Handel Greenhalgh, Edward Theodore Burton, Robert Hughes, Nelson Joseph Roche, Herbert Lyne Geoghegan, John Henry Lightfoot, and Penry Garnons Williams.

The undermentioned Surgeons have been promoted to the rank of Staff Surgeon:—Dated May 14th: Campbell Ross, Cecil Robert Morshead Baker, George Gordon Vickery, and Henry Dennis Drennan.

The undermentioned have been granted temporary commissions as Surgeons in His Majesty's Fleet:—Dated May 11th: Robert Tennent and Basil Sampson. Dated May 12th: Howard James Bates.

ARMY MEDICAL SERVICE.

John Atkins to be temporary Colonel (dated Oct. 20th, 1914).

Temporary Major Cuthbert S. Wallace, from Royal Army Medical Corps, to be temporary Colonel (dated April 29th, 1915).

ROYAL ARMY MEDICAL CORPS.

The undermentioned are granted temporary rank whilst employed at the Norfolk War Hospital:—Dated April 22nd: As Lieutenant-Colonel: David George Thomson. As Major: Alexander Murchison Humphry, Charles Noon, and John Spence Law.

Temporary and Honorary Captain Cyril Alfred Rankin Nitch is granted the temporary and honorary rank of Major whilst serving with the British Red Cross Hospital, Netley (dated April 29th).

The undermentioned are granted temporary rank whilst employed at the Beaufort War Hospital, Bristol:—Dated May 1st: As Lieutenant-Colonel: James Vincent Blackford. Dated May 1st: As Major: John Robert Parry Phillips and Alexander McLean Cato. Dated April 17th: Frederick Sherman Toogood to be temporary Major whilst employed at the Lewisham War Hospital.

The undermentioned to be granted temporary rank whilst serving with the County of London War Hospital:—Dated May 1st: As Lieutenant-Colonel: John Robert Lord. Dated May 1st: As Major: Norcliffe Roberts and Reginald George Riches. William Dewey Duncombe to be temporary Major whilst serving at the City of London War Hospital (dated May 1st). Christopher Thackery Parsons to be temporary Major whilst serving at the Fulham War Hospital (dated May 1st). Edward Llewellyn Zenas Fickling to be temporary Lieutenant (dated Dec. 12th, 1914). Second Lieutenant Albert Edward Quine, from Reserve of Officers, to be temporary Lieutenant (dated May 4th).

The undermentioned Captains relinquish their temporary commissions on ceasing to serve with the Duchess of Westminster's War Hospital:—Dated May 18th: Sydney Scott and Thomas M. Body.

The undermentioned to be temporary Captains whilst serving with the Duchess of Westminster's War Hospital:—Dated May 18th: Forbes Fraser and John Wilfred Nunn.

The undermentioned to be temporary Lieutenants whilst serving with the Welsh Hospital: William MacAdam (dated April 26th) and David John Harries (dated May 10th).

The undermentioned to be temporary Majors: Alfred Lingard (dated April 9th) and temporary Captain Charles Coley Choyce (dated April 27th).

John Evans Phillips, late Captain, 1st North York Volunteer Artillery, to be temporary Captain (dated April 17th).

Harold Jossé Johnson, late Surgeon Captain, to be temporary Honorary Captain (dated May 19th).

The undermentioned to be temporary Lieutenants:—Dated March 1st: William Harle Stott. Dated March 15th: Arthur Cyril Albert Jekyll, Cedric Keith Cohen, and Eric Payten Dark. Dated March 17th: Keith Gemmell Colquhoun, Clive Travers Stephen, Henry Cecil Colville, and Alan Pryde. Dated March 19th: Charles Francis Drew. Dated March 23rd: Edward Rogerson, Louis Michael Pigott, Reginald Blockley Lucas, and William Heitland Godby. Dated April 21st: John Wright Turner, Thomas Wright, Arthur George James Thompson, Thomas Warner, Walter Charles Blackham, Walter Dymock Perry, George Hugh Culverwell, Robert Wilson Buchanan, William Penberthy, Isidore Jack Block, and Thomas Gilcriest. Dated April 22nd: James Boyd, Arthur Thomson Marshall, John Brunton, Barrington William Mudd, Ray Cecil Phelps, Harry Lovett Cumming, and James Hamilton Bogan. Dated April 23rd: James Lawson Whateley, John Hay Heddle, Ivan Whiteside Magill, Charles Gibson, Edmund Sheppard Cuthbert, John Moir MacKenzie, James Murdoch MacKay, Donald McDonald McIntyre, and Thomas Ruddock-West. Dated April 28th: Thomas Gee Williams.

SPECIAL RESERVE OF OFFICERS.

Supplementary to Regular Units or Corps: Royal Army Medical Corps.—The undermentioned Lieutenants (on probation) are confirmed in their rank: John R. Crolius and Robert H. Williams.

TERRITORIAL FORCE.

Army Medical Services.

Major Charles J. Martin, from Attached to Units other than Medical Units, to be Deputy Assistant Director of Medical Services, 2nd London Division.

Lieutenant-Colonel Ernest B. Dowsett, from 5th London Field Ambulance, to be Assistant Director of Medical Services, 2nd London (Reserve) Division, with the temporary rank of Colonel.

Royal Army Medical Corps.

2nd East Anglian Field Ambulance: Lieutenant Arthur Edwin Tait, from 2nd Northumbrian Field Ambulance, to be Lieutenant.

2nd Home Counties Field Ambulance: Henry Travers Jones to be Lieutenant.

2nd North Midland Field Ambulance: Major Richard M. West to be temporary Lieutenant-Colonel. Captain Joseph F. Dixon to be temporary Major.

1st Northumbrian Field Ambulance: Captain George H. Spencer to be temporary Major.

2nd Northumbrian Field Ambulance: Henry Stonehouse to be Lieutenant.

2nd Wessex Field Ambulance: Ernest Hall Scholefield to be Lieutenant.

3rd Wessex Field Ambulance: Captain Harold W. Read, from Attached to Units other than Medical Units, to be Captain.

2nd Highland Field Ambulance: John Moir to be Lieutenant.

London Mounted Brigade Field Ambulance: John Peers MacLulich (late Captain, South African Medical Corps) to be Captain (temporary).

South-Eastern Mounted Brigade Field Ambulance: Lieutenant Charles E. Silvester to be Captain. Alexander Graham Speirs Logie to be Lieutenant.

1st Eastern General Hospital: William Lombard Murphy to be Captain, whose services will be available on mobilisation.

2nd Northern General Hospital: The undermentioned to be Captains, whose services will be available on mobilisation: Carlton Oldfield, Leonard Alfred Rowden, Alfred Gough, Henry Harold Greenwood, Joseph Albert Blayney, Arthur Ellison, and Frederick William Marshall Greaves.

Highland Casualty Clearing Station: Captain Alexander Don, from 1st Scottish General Hospital, to be Major (temporary). James Davidson to be Lieutenant.

South Midland Casualty Clearing Station: Astley Bennett Prosser to be Lieutenant.

Highland Divisional Sanitary Section: Captain James M. McQueen, from 1st Scottish General Hospital, to be Captain.

2nd London Sanitary Company: Frederick George Rose to be Lieutenant.

3rd London General Hospital: Lieutenant Alfred Hope Gosse to be Captain on the permanent personnel.

1st Scottish General Hospital: Ian Gordon Bisset to be Lieutenant.

1st Southern General Hospital: Lieutenant-Colonel Harry G. Barling is seconded.

3rd Southern General Hospital: Arthur John Drew to be Captain, whose services will be available on mobilisation.

Attached to Units other than Medical Units.—To be Majors: Surgeon-Major Percival E. Barber, from West Riding Royal Horse Artillery, and Surgeon-Captain Alfred Robinson, from 5th Battalion, The York and Lancaster Regiment. William Appleyard (late Captain, 6th Battalion, The Prince of Wales's Own (West Yorkshire Regiment)) to be Captain. To be Lieutenants: Edgar Babst (late Lieutenant, 5th Battalion, Northumberland Fusiliers), Andrew Lowry McCully, John David Jones (late Lieutenant, 4th Battalion, The Welsh Regiment), and Samuel Shepheard. Lieutenant Charles W. Wirgman is seconded.

COUNCIL OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND.—Mr. Alexander Blayney, F.R.C.S. Irel., has been elected a member of the Council of the Royal College of Surgeons in Ireland in room of the late Sir John Lentaigne. Mr. Blayney, like his predecessor, is a member of the staff of the Mater Misericordiæ Hospital.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8117 births and 4954 deaths were registered during the week ended Saturday, May 15th. The annual rate of mortality in these towns, which had steadily declined from 19·9 to 15·5 per 1000 in the five preceding weeks, further fell in the week under notice to 14·2 per 1000 of their aggregate population, estimated at 18,136,180 persons at the middle of last year. During the first six weeks of the current quarter the mean annual death-rate in these towns averaged 17·2, against a corresponding rate of 18·1 per 1000 in London. Among the several towns the death-rate last week ranged from 5·2 in Ilford, 7·2 in Gloucester, 7·3 in Ealing and in Great Yarmouth, 7·7 in Enfield, and 7·9 in Wimbledon, to 22·0 in Bury, 22·4 in York, 22·5 in Lincoln, 24·2 in Sunderland, and 31·8 in Middlesbrough.

The 4954 deaths from all causes were 429 fewer than in the previous week, and included 484 which were referred to the principal epidemic diseases, against 711 and 557 in the two preceding weeks. Of these 484 deaths, 238 resulted from measles, 105 from whooping-cough, 57 from infantile diarrhœal diseases, 48 from diphtheria, 25 from scarlet fever, and 11 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·4, or 0·2 per 1000 less than in the previous week. The deaths attributed to measles, which had been 389, 392, and 276 in the three preceding weeks, further fell to 238 last week, and caused the highest annual death-rates of 2·0 in Salford and in Sheffield, 2·4 in Barrow-in-Furness, 2·6 in Coventry, 3·8 in Wolverhampton, 4·8 in Sunderland, 6·1 in Walsall, and 6·6 in Middlesbrough. The deaths referred to whooping-cough, which had decreased from 167 to 121 in the five preceding weeks, further fell to 105 last week; the highest death-rates from this cause were 1·2 in Walthamstow, 1·6 in Acton and in St. Helens, 2·1 in Middlesbrough, and 2·3 in Wigan. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 65, 73, and 67 in the three preceding weeks, further fell to 57 last week, and included 15 in London, and 3 each in Birmingham and Manchester. The deaths attributed to diphtheria, which had been 49, 56, and 51 in the three preceding weeks, declined to 48 last week, of which 11 occurred in London, 4 in Manchester, and 3 in West Ham. The deaths referred to scarlet fever, which had been 29, 34, and 30 in the three preceding weeks, further fell to 25 last week, and included 6 in London and 2 each in Willesden, Birmingham, Coventry, Manchester, Blackburn, and Leeds. The fatal cases of enteric fever, which had been 8, 12, and 12 in the three preceding weeks, were 11 last week, but showed no excess in any particular town.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2369, 2377, and 2384 at the end of the three preceding weeks, had decreased to 2332 on Saturday last; 270 new cases were admitted during the week, against 259, 316, and 307 in the three preceding weeks. These hospitals also contained on Saturday last 1174 cases of diphtheria, 186 of measles, 59 of enteric fever, and 12 of whooping-cough, but not one of small-pox. The 1255 deaths from all causes in London were 129 fewer than in the previous week, and corresponded to an annual death-rate of 14·5 per 1000. The deaths referred to diseases of the respiratory system, which had decreased from 469 to 289 in the four preceding weeks, further fell to 227 in the week under notice, but were 37 above the number recorded in the corresponding week of last year.

Of the 4954 deaths from all causes in the 96 towns 210 resulted from different forms of violence and 376 were the subject of coroners' inquests, while 1512 occurred in public institutions. The causes of 48, or 1·0 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Sheffield, Leeds, Bristol, West Ham, Bradford, Hull, Newcastle-on-Tyne, and in 67 other smaller towns. Of the 48 uncertified causes of death, 10 were registered in Birmingham, 6 in Liverpool, 3 each in Gillingham, Stoke-on-Trent, Bootle, and Gateshead, and 2 each in Southend-on-Sea, Dudley, Nottingham, and Rotherham.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,345,500 persons at the middle of this year, 1175 births and 807 deaths were registered during the week ended Saturday, May 15th. The annual rate of mortality in these towns, which had been 18·5, 20·2, and 18·1 per 1000 in the three preceding weeks, further fell to 17·9 per 1000 in the week under notice. During the first six weeks of the current quarter the mean annual death-rate in these towns averaged 19·4, against a corresponding rate of 17·2 per 1000 in the large English towns. Among the several towns the death-rate last week ranged from 11·7 in Clydebank, 12·9 in Edinburgh, and 14·0 in Kirkcaldy, to 19·6 in Glasgow, 21·3 in Falkirk, and 27·6 in Motherwell.

The 807 deaths from all causes were 8 fewer than the number in the previous week, and included 117 which were referred to the principal epidemic diseases, against 150 and 142 in the two preceding weeks. Of these 117 deaths, 49 resulted from measles, 45 from whooping-cough, 9 from infantile diarrhœal diseases, 8 from diphtheria, and 6 from scarlet fever, but not one from enteric fever or from small-pox. The mean annual death-rate from these diseases was equal to 2·6, against 1·4 per 1000 in the large English towns. The deaths attributed to measles, which had increased from 19 to 47 in the four preceding weeks, further rose to 49 last week, and comprised 40 in Glasgow, 5 in Aberdeen, 3 in Falkirk, and 1 Clydebank. The deaths referred to whooping-cough, which had declined from 90 to 65 in the four preceding weeks, further fell to 45 last week, of which 33 occurred in Glasgow, 4 in Aberdeen, and 3 in Edinburgh. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 12, 9, and 15 in the three preceding weeks, fell to 9 last week, and included 3 each in Glasgow and Edinburgh. The deaths attributed to diphtheria, which had been 6, 12, and 7 in the three preceding weeks, were 8 last week, of which 3 were registered in Glasgow. The 6 deaths referred to scarlet fever were 2 below the average in the earlier weeks of the quarter, and included 2 each in Glasgow and Aberdeen. In addition to the above deaths, a fatal case of typhus occurred in Dundee.

The deaths referred to diseases of the respiratory system, which had been 145, 153, and 118 in the three preceding weeks, slightly rose to 121 in the week under notice, and were 17 in excess of the number recorded in the corresponding week of last year. The deaths from violence numbered 26, against 25 and 23 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,212,380 persons at the middle of this year, 582 births and 438 deaths were registered during the week ended Saturday, May 15th. The annual rate of mortality in these towns, which had been 22·4, 19·1, and 19·9 per 1000 in the three preceding weeks, fell to 18·8 per 1000 in the week under notice. During the first six weeks of the current quarter the mean annual death-rate in these towns averaged 21·0, against corresponding rates of 17·2 and 19·4 per 1000 in the English and Scotch towns respectively. The death-rate last week was equal to 21·9 in Dublin (against 14·5 in London and 19·6 in Glasgow), 15·1 in Belfast, 16·3 in Cork, 20·2 in Londonderry, 31·1 in Limerick, and 19·0 in Waterford, while in the 21 smaller towns the mean death-rate was 18·3 per 1000.

The 438 deaths from all causes were 25 fewer than the number in the previous week, and included 27 which were referred to the principal epidemic diseases, against numbers declining from 41 to 33 in the three preceding weeks. Of these 27 deaths, 10 resulted from whooping-cough, 8 from infantile diarrhœal diseases, 4 from measles, 3 from diphtheria, and 1 each from enteric fever and scarlet fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·2, against corresponding rates of 1·4 and 2·6 per 1000 in the English and Scotch towns respectively. The deaths attributed to whooping-cough, which had been 20, 9, and 9 in the three preceding weeks, were 10 last week, and comprised 5 each in Dublin and Belfast. The deaths of infants (under 2 years) referred to diarrhœa and enteritis, which had been 5, 10, and 9 in the three preceding weeks, were 8 last week, of which 6 were recorded in Dublin. The fatal cases of measles, which had been 13, 11, and 10 in the three preceding weeks, further fell to 4 last week, and comprised 2 each in Belfast and Portadown. Of the 3 deaths attributed to diphtheria, 2 were registered in Dublin and 1 in Belfast. The fatal case of enteric fever was recorded in Sligo, and that of scarlet fever in Waterford.

The deaths referred to diseases of the respiratory system, which had steadily declined from 158 to 76 in the five preceding weeks, rose to 82 in the week under notice. Of the 438 deaths from all causes, 138, or 32 per cent., occurred in public institutions, and 4 resulted from various forms of violence. The causes of 16, or 3·7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the large English towns the proportion of uncertified causes did not exceed 1·0 per cent.

THE death by fever in Upper Nigeria of Dr. John Beattie, of the West African Medical Service, is announced.

Correspondence.

"Audi alteram partem."

DIFFICULT LABOUR AND DENTAL DEFORMITIES.

To the Editor of THE LANCET.

SIR,—In your issue of April 24th I notice a request by Mr. J. F. Colyer asking for details and models of dental deformities presumably caused by obstetric operations. As I have been since 1906 carefully collecting such statistics for a future communication and have not heard of others engaged in this inquiry, I believe I am the only observer who possesses the information which Mr. Colyer desires, but this is, obviously, at present not at Mr. Colyer's disposal.

I do not believe Mr. Colyer will be able to obtain much reliable material as a result of his impetuous appeal in your columns, for as these deformities do not fully develop until the permanent teeth have erupted, a period of more than seven years must elapse after birth before the exact nature of the deformity is known. It is unlikely that the accoucheur who was present at the birth would take models of the denture, or even associate the deformity with the difficult labour. I am sure Mr. Colyer will have to adopt my plan of patiently following up each case as it presents itself, interrogating the mother, and if possible examining the medical attendant's records. This is a very slow process, but it is the only way to obtain sufficient material for proof; the field is so entirely new and tabulated records will have to be made. Mr. Colyer has under his own care one of the most valuable cases in this connexion. At the annual meeting of the International Medical Congress in 1913 at a demonstration meeting at the Dental Hospital he exhibited a boy, an extreme case of mandibular protrusion. He told us this was nothing, just an ordinary case of mandibular protrusion. In a conversation I had with the mother before the demonstration, and in reply to my inquiry, she informed me that the labour was very prolonged and dangerous, the head being in the *left side*. It was evident that this was a case of transverse presentation, and that the operation of turning had been performed; to do this the operator had exerted sustained and forcible traction by means of the mandible, forcibly straightening this cartilaginous structure at the angle and increasing its length; from this injury it had not recovered. Possibly the relation by the mother to Mr. Colyer of our conversation has served to interest him in this inquiry.

I cannot claim to be the first in this field; this honour is due to Dr. L. S. Chilcott, whose paper, An Obstetrical Deformity of the Mandible, appeared in the *Dental Cosmos* in March, 1906, but I do believe I am the first to systematically study each case of these deformities from the obstetrical standpoint. Dr. Chilcott's case was one of breech presentation, and he contended that the deformity was caused by great pressure upon the angle by the bone of the pelvic outlet, producing an open bite. The angle of the mandible in this case was so obtuse that it had almost disappeared.

The above are both cases of mandibular deformity due to malpresentation. Superior protrusion is much more common, and I have suspected for some time that a small pelvic outlet and the use of the midwifery forceps, the lateral pressure of which is very powerful, is responsible for many cases of this condition.

My records show that of those cases I have been able to trace the forceps were used in 80 per cent.

I am, Sir, yours faithfully,

Denmark Hill, S.E., May 12th, 1915. FREDERICK LONNON.

MENTAL TREATMENT BILL.

To the Editor of THE LANCET.

SIR,—My attention has been called to a letter from Dr. S. E. White in your issue of May 8th. This letter is based on a misconception of the law and the results following from the law, which were clearly explained in the Memorandum to Lord Russell's Bill mentioned in the letter.

By Section 315 of the Lunacy Act, 1890, it is a misdemeanour to take charge of, receive to board or lodge or to detain a lunatic or *alleged* lunatic in an unlicensed house; and it is made unlawful, except under the provisions of the Act, for any person to receive or detain two or more lunatics in any house unless the house is an institution for lunatics or a workhouse. The case law shows clearly that it is no defence to a prosecution to show that the accused was quite unaware of the fact that a patient was a lunatic or *alleged* lunatic. The practical result is that very few people indeed can be found willing to receive "borderline" cases, for the risk of prosecution is too great, and if prosecution takes place conviction almost inevitably follows. It is futile to criticise a proposal to legalise treatment which is voluntary as regards the patient, when the law makes it a crime to receive or take charge of an alleged lunatic irrespective of the question whether he consents or not.

Lord Russell's Bill was intended to enable treatment of "borderline cases" without fear of prosecution. The rest of the Bill was machinery to prevent abuse of such permission. Legislation is imperatively necessary for this purpose.

I am, Sir, yours faithfully,

ROLAND BURROWS.

Brick Court, Temple, E.C., May 13th, 1915.

⁂ The Bill was formally withdrawn this week and some explanation of the views of the Government appeared in a statement made by Mr. Cecil Harmsworth.—ED. L.

THE DETECTION OF PROJECTILES IN WOUNDS BY THE ELECTRO-MAGNET.

To the Editor of THE LANCET.

SIR,—I hasten to draw the attention of my colleagues employed at hospitals for the wounded to the excellent results obtained from the methods adopted by Professor Bergonié, who searches for projectiles by means of an electro-magnet with alternating current (fonctionnant sur courant alternatif).

When a magnetic body is found within the field of the apparatus a quite particular vibration is produced which the hand easily recognises, and which emanates from the foreign body itself. If this foreign body is situated in the tissues the maximum point of vibration corresponds with the projection of this body upon the superfices (à la projection de ce corps sur la superficie). The intensity of the vibration apprises us at the same time of the volume and situation in point of depth of the body. The process is rapid, simple, cleanly, and allows the surgeon to inform himself at every stage of his operation.

I have had the privilege of experimenting with this apparatus under the direction of Professor Bergonié himself in a hospital at the front, and the results have far surpassed our expectations. I feel it my duty to make it known as a matter of urgent importance. I know how much sudden enthusiasms should be suspected in the case of a new method. But at this time when inventions for demolishing humanity seem to be attaining perfection every day, one can claim some credit for an invention which promises, though it be novel, to alleviate suffering.

I hold myself at the disposal of my colleagues for all additional explanations.

I am, Sir, yours faithfully,

GUSTAVE MONOD,
Médecin Major, M.D. Paris, M.R.C.P. Lond., &c.
Ambulance 10, Corps d'Armée 6, Secteur 154.

THE MEDICAL DEFENCE UNION AND THE NATIONAL INSURANCE COMMISSIONERS.

To the Editor of THE LANCET.

SIR,—In order to test the validity and legality of the regulations of the National Insurance Commissioners in the matter of surcharging panel practitioners for alleged extravagance in prescribing for insured persons, the Medical Defence Union has, on behalf of two of its members concerned, caused to be issued writs in the High Court. I need hardly point out to your readers in general, and to those on the panel in particular, the importance of these actions, which I trust will be before His Majesty's judges within a comparatively short time. The Medical Defence Union has already been successful in every action or appeal brought in respect of legal questions under the Act, and is engaged daily in working, *inter alia*, for the protection of those who have joined the panel willingly or unwillingly.

Those who have not joined the Medical Defence Union should do so without delay, as this year will be critical in the history of panel practitioners, and they cannot afford to be without its protection.

I am, Sir, yours faithfully,

A. G. BATEMAN,
General Secretary.
4, Trafalgar-square, W.C., May 15th, 1915.

PRELIMINARY EXPLORATION OF THE PELVIS IN CERTAIN CASES OF ACUTE APPENDICITIS.

To the Editor of THE LANCET.

SIR,—Professor W. Sampson Handley, in his interesting lecture on Ileus Duplex in your issue of May 1st, advocates exploration of the pelvis, through a preliminary median sub-umbilical incision, in cases where there is doubt as to whether the infection has spread from the right iliac fossa to the pelvis. On the principle that in dealing with a possible extension of the infection beyond the iliac fossa it is always better to know than to guess, the writer has for some years employed a procedure similar, except in the detail that a 2-inch incision is made over the lower portion of the left rectus muscle, the fibres of which are split, with the object of preventing post-operative hernia.

A recent case was that of a young man who when first seen had advanced appendicitis and was ashen grey from toxæmia. Preliminary exploration through the left lower rectus showed gross infection of the lower abdomen. Large drainage tubes through the left rectus, the right iliac fossa and loin, combined with the Fowler position and many pints of saline solution given per rectum by Murphy's method, resulted in interrupted recovery with total absence of incisional herniæ. Preliminary exploration through the left lower rectus takes but a few minutes, changes doubt into certainty, and appears to have no serious drawbacks.

I am, Sir, yours faithfully,

Plymouth, May 4th, 1915. C. HAMILTON WHITEFORD.

THE TREATMENT OF CORNS.

To the Editor of THE LANCET.

SIR,—I have read with much interest the letter of Mr. Paul Bernard Roth in your issue of May 15th. Some years ago I was an absolute martyr to corns, one particular corn giving me most excruciating annoyance when I walked. I conceived the idea of wearing two pairs of socks, a thin pair (merino) next the skin and a thick woollen pair over these, and I took particular care to have boots with thick soles "made to the foot" and would not have my "foot made to the boot." In a very short time my corns disappeared and I have not been troubled since, but my friends laugh at my boots. I now find walking a pleasure.

I am, Sir, yours faithfully,

May 14th, 1915. D.P.H.

Obituary.

BERTRAM HERBERT LYNE STIVENS,

M.R.C.S., M.D. BRUX.

Dr. Bertram Herbert Lyne Stivens passed away at his residence, 107, Park-street, Grosvenor-square, London, on Sunday afternoon, May 9th. He was in his usual health up to Friday, April 30th, when a feverish attack with sore-throat supervened. On Monday, May 3rd, feeling somewhat better, he attended to his professional duties, as also on the following day. On Tuesday evening, May 4th, the inflammation of the throat returned and became rapidly worse, and on Sunday afternoon he died from streptococcal pharyngitis with œdematous laryngitis and pyæmic infection. This is always rapid and often fatal, particularly in a constitution which is not strong. In spite of his manly figure and fine presence Dr. Stivens had visibly failed, we are informed by a personal friend of his, since the death of a beloved daughter two years ago.

Dr. Stivens was born at Birkdale in 1855. He spent his early life in Cheshire and was educated at Bunbury Grammar School. Later he studied abroad at Stuttgart and Heidelberg University. He then decided upon a medical career and entered the medical school of King's College Hospital in 1877, being some four or five years older than most of the men of his year. He had a very successful career as a student, and proceeded to the tenure of two residential posts at that time much coveted. He was first house accoucheur under the late Dr. W. S. Playfair, and later house surgeon to the great Lister himself at the time when the operating theatre used to be crowded with visitors to learn the new antiseptic methods. These two posts under such masters were sufficient to lay the foundation of a talent for accurate and conscientious observation to which he owed his success in practice.

Although Dr. Stivens might well have aspired to consulting work, the opportunity of joining an old-established practice in the West-end decided him to go direct from the wards to family practice in Kensington Gardens-square. Here his success, at a comparatively early age, was both rapid and easy. It was easy because to his knowledge and skill he was able to add the manner which is such a large factor of success in private practice. His manner was not a pose, but was the expression of a frank, sympathetic, genial, and hearty nature which took the deepest and most sincere interest in his patients and his friends. He later moved from Kensington Gardens-square to Park-street, Grosvenor-square, where his practice still further rapidly increased, and where he had the honour of attending members of the Royal family. He was an accomplished linguist, and his studies abroad stood him in good stead in medical practice. He included amongst his friends many of the most distinguished continental physicians; he often visited their clinics, and introduced into this country several new methods of investigation and treatment which were being developed on the continent. Thus he appreciated the importance of the analytical investigations in gastro-intestinal diseases which were being undertaken in France and Germany, and he was perhaps the first to carry out in this country these methods of investigation, and to utilise them in guidance for appropriate medical treatment. He was familiar with the operation for removal of enlarged tonsils and adenoids in suitable cases long before it was generally practised in this country, and was among the first in performing this useful operation here in suitable cases. If he had aspired to it he might certainly have risen to more scientific eminence in his profession, since he had great gifts and especial knowledge and experience. He was content, however, with a less public and perhaps more satisfactory career, for it may be truly said of him that he loved to go about doing good.

Circumstances made him early in life independent of his profession, but his love for the practice of his art induced him to continue it long after other men would have given it up. He was a keen sportsman and fond of country life, and he was happy in his country home when the exigencies of his busy life permitted him to stay there. He was a devoted husband and father, and a most loyal and hospitable friend. His friend and patient, Sir Rider Haggard, suggests for his epitaph the words "Our Beloved Physician," and this expresses the regard which all his patients without exception felt towards him.

Dr. Stivens married Belita, the daughter of the late Mr. George Drabble, of Pembridge-square, W. The sympathy of the medical profession and of a large circle of friends will go out to his widow and two daughters in their bereavement.

A New Route to Italy.—The Paris, Lyons, and Mediterranean Railway opened to traffic on May 16th the new line "Frasne-Vallorbe," the construction of which was commenced at the end of the year 1910. This line has a double track of about 24 kilometres (15 miles) in length, 22 of which are in French territory. It branches off from the Dijon-Pontarlier line at the station of Frasne, and crosses one of the most picturesque districts of the French Jura. It serves the two beautiful lakes of Remoray and Saint Point, penetrating the "Mont d'Or" through a tunnel of 6670 yards in length, and joining again the Pontarlier-Lausanne line at Vallorbe. The improvements carried out have resulted in a gain of from 45 minutes to one hour on the journey between Paris and Lausanne. The large radius of the curves is favourable for speed, and, in winter, the tunnels and pine forests through which the line passes are a protection against snowstorms. With these improvements the P.L.M. line will, more and more, become the traveller's highway between Paris and Italy.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

The Central Committee.

A meeting of the Central Committee was held on Thursday, May 13th, when Sir Rickman Godlee, the chairman, announced that he had received from Dr. Péchère, President of the Aide et Assistance aux Médecins et Pharmaciens Sinistrés, a formal receipt for the money sent by the Fund to Belgium for distribution, and it was agreed to forward the same amount on future occasions, and at intervals, as soon as particulars of distribution had been ascertained.

The treasurer, Dr. Des Vœux, reported that he had placed further sums of money on deposit, and noted that the subscription lists had now begun to get smaller. It was the feeling of the Committee that this might be due to the fact that much of the money collected had not yet been spent, but it was hoped that the urgent need of the cause would not be lost sight of. At the rate of expenditure sanctioned by the Committee, the Fund, at its present figure, will not last very long, and it is particularly desirable that when hostilities cease there should be some money in hand to form a nucleus for an international scheme of reinstatement after the war.

Clothes Required.

Gifts of clothes would be welcomed by the Committee. The supply is running short, and assistance in this direction is often very valuable to and highly appreciated by our Belgian colleagues and their families. All parcels of clothes should be addressed to Mrs. Colebrooke, Wesleyan Training College, Horseferry-road, London, S.W.

Birmingham Local Committee.

This committee held its final meeting on Tuesday, May 11th, with Professor Barling in the chair, in order to receive reports from Professor R. Saundby and Mr. F. Smith. The accounts and vouchers had been submitted to Sir Thomas Barclay, who had audited them and given certificates of their accuracy. The total amount collected was £526 5*s.* 3*d.*, the whole of which has been remitted to Dr. Des Vœux, the honorary treasurer of the Fund in London. All expenses have been defrayed locally, and there has been no deduction from the amounts subscribed.

Further subscriptions will be forwarded to Dr. Des Vœux, and acknowledged as usual by publication of the names of the donors in the medical journals.

The Week's Subscriptions.

The subscriptions received by Dr. Des Vœux up to Tuesday evening last, in addition to those previously acknowledged, are as follows:—

	£	*s.*	*d.*
Bucks Division, B.M.A. (per Dr. A. E. Larking)—			
Dr. W. H. Square ...	1	1	0
Dumfries and Galloway Division, B.M.A. (per Dr. J. Dewar Robson, Hon. Sec.)—			
Dr. Scott	0	10	6
Dr. Bryson	0	10	6
Dr. Chalmers	1	1	0
Dr. Dunlop	1	1	0
Dr. McKie	0	10	6
Dr. Shaw	1	1	0
Dr. J. Dewar Robson...	2	2	0
Dr. Brown	1	1	0
Stewartry of Kirkcudbright Secondary Education Committee (per Dr. J. Gair Johnston, School Medical Officer)	1	1	0
Tower Hamlets Division, B.M.A. (per Dr. W. H. F. Oxley, Hon. Sec.)—			
Dr. H. Hamilton Mack	0	10	6
Nottingham and Notts Pharmaceutical Association (per Mr. H. P. Middleton)	5	5	0
Hants County Pharmaceutical Association (per Mr. S. G. Bartlett)	0	10	6

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham-gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Ltd.

The War.

THE CASUALTY LIST.

THE following names of medical officers appear in the casualty lists published since our last issue:—

Killed: Major J. Woods, I.M.S., Lieutenant Henry Wyndham Goodden, (attached 2nd Royal Fusiliers), Lieutenant M. Pern, Captain S. Field, all of the R.A.M.C. Captain Field was the son of Mr. G. P. Field, the well-known aurist.

Died of wounds: Lieutenant John Aquila MacMahon, R.A.M.C.

Wounded: Captain E. A. Sutton, Lieutenant E. H. Griffin, Lieutenant C. W. Sparks (attached Royal Irish Fusiliers), Lieutenant A. N. Hooper (attached 2nd East Yorks Light Infantry), Lieutenant E. C. Linton, Major J. S. Y. Rogers (attached 4th Black Watch T.F.), Captain W. Rogers (attached 5th Cheshires), Lieutenant F. H. Sprague, all of the R.A.M.C. Captain J. W. B. Bean, Australian Medical Service.

Missing: Captain P. G. M. Elvery, R.A.M.C. (attached 1st Yorks Light Infantry), Fleet-Surgeon George A. Waters, R.N., of the *Goliath.* Lieutenant J. A. Stenhouse, R.A.M.C., previously officially reported missing, is now unofficially reported a prisoner of war.

Both the medical officers of the *Lusitania*, Dr. J. F. McDermott and Dr. Joseph Garry, were among the drowned.

Captain Eric Evans (4th Royal Welsh Fusiliers), who has died of his wounds, was a son of Mr. E. D. Evans, M.R.C.S., J.P., of Wrexham, and had nearly completed his medical course when the war broke out and the regiment in which he held a lieutenant's commission was mobilised.

DEATHS AMONG THE SONS OF MEDICAL MEN.

Already many medical men have had the sad experience of losing their sons in the war. The late Dr. Lewis Jones, Sir Wilmot Herringham, Dr. Norman Moore, Dr. H. D. Rolleston, Sir Pardey Lukis, Sir James Barr, and Mr. W. H. Battle are among those who have thus paid with their dearest possessions the price of patriotism, and other names will occur to our readers. During this month a heavy toll of this kind has been exacted from members of our profession, the following deaths being announced in recent casualty lists. Lieutenant T. M. Garrod, second son of Dr. A. E. Garrod; Second Lieutenant R. T. Shaw, elder son of Dr. Lauriston Shaw; Lieutenant C. B. Spence, younger son of Dr. James B. Spence, of Burntwood; Second Lieutenant R. Fazan, youngest son of Mr. C. H. Fazan, of Wadhurst; Second Lieutenant E. H. Orton, youngest son of Dr. G. H. Orton, of Kensington; Second Lieutenant A. H. S. Tuke, only son of Dr. T. S. Tuke, of Chiswick; Second Lieutenant H. W. Hodges, elder son of Mr. H. C. Hodges, of Watton-at-Stone; Captain T. R. Scott, eldest son of Dr. Thos. Rennie Scott, of Musselburgh; Second Lieutenant T. M. Bond was the son of Major T. M. Bond, attached R.A.M.C. Captain G. D. Mathew, whose death has also been reported, was the youngest son of the late Brigade-Surgeon Lieutenant-Colonel R. G. Mathew; and Second Lieutenant F. P. Trevor was the only son of the late Mr. A. T. H. Trevor, of Beaumaris.

THE MEDICAL RESEARCH COMMITTEE (NATIONAL HEALTH INSURANCE) AND WORK IN CONNEXION WITH THE WAR.

An interim report has been issued on the special work in connexion with the war at present undertaken by the Medical Research Committee of the National Health Insurance Commission.

It is addressed by Dr. W. Morley Fletcher, F.R.S., Secretary of the Medical Research Committee, to the Right Hon. E. S. Montagu, M.P., Chairman of the National Health Insurance Joint Committee, and runs as follows:—

As desired, I submit herewith a *précis* of the work already undertaken by the Medical Research Committee in connexion with the war. This work is, of course, additional to the schemes of research previously organised by the committee in other directions independently of the war, which is still in progress, except in so far as it has been thought expedient or necessary to suspend it in favour of work of greater urgency.

Mount Vernon Hospital Building, Hampstead.

The building and grounds which the committee had acquired at Hampstead for conversion into the laboratories of their central institute were placed by the committee upon the outbreak of war at the disposal of the War Office. For some months the building has been in use as a military hospital, for which its nature and position give it exceptional fitness.

Compilation and Analysis of the Medical Statistics of the Military Forces.

The whole resources of the Statistical Department of the committee, under the direction of Dr. John Brownlee, have been placed at the disposal of the War Office, and this department is now carrying out, on behalf of the Army Council, the compilation of the statistics of the sick and wounded from the military forces. At a later date the department will undertake the analysis of the collected statistics. For the purposes of this work the committee have taken special premises, which they have equipped with the necessary furniture and staff. Card indices are being compiled from the returns provided from official sources, and typists are engaged at the military hospitals throughout the country to secure the rapid collection of information from the hospital books. The committee are indebted to the London Divisional Office of the Labour Exchanges under the Board of Trade for the rapid and economical organisation of these women workers. In the view of the committee the compilation and analysis of these medical statistics, in the circumstances of the present war, will have a general value in providing information in various directions with regard to the health and stamina of the male population of these islands, in addition to its particular value from the special points of view of military requirements and of the Army Medical Service. The services of Dr. Brownlee and his assistants have also been lent for a statistical investigation of the male population of the German Empire and its present distribution, which has been undertaken in connexion with military purposes.

Pathological Work at Military Hospitals.

The committee have assisted the War Office in supplying pathologists and bacteriologists for work at military hospitals in this country. In general, where commissioned officers have been obtainable for this work, grants have been made for the supply of special apparatus for particular purposes not falling within the ordinary routine of hospital work. At many of the centres grants have been made for part-time work by pathologists without commissions, whose work in some cases is carried out in adjacent laboratories belonging to university or other bodies. In certain cases the committee have equipped special laboratories within military hospitals for the purposes of routine work or for the conduct of special inquiries, or both.

Special Inquiries.

Work by the Committee's Bacteriological Department.—The whole services of the Bacteriological Department under the direction of Sir Almroth Wright, who had accepted appointment by the committee as director of that department before the outbreak of war, have been applied to purposes of military importance. During the first month of the war Sir Almroth Wright and his staff appointed by the committee gave the whole of their time to assist at the inoculation department of St. Mary's Hospital in the preparation of vaccines for the use of H.M. Forces, and during that time very large quantities of antityphoid vaccine and antisepsis vaccine were supplied, as they have continued since to be supplied by the inoculation department, to the Admiralty, the War Office, and the French and Belgian armies. Sir Almroth Wright in September was appointed consulting physician to H.M. Forces Overseas, with the rank of colonel, and he, with Captain Douglas and Lieutenant Parry Morgan, have since prosecuted important researches at Boulogne, bearing upon the treatment of infected wounds. Preliminary results of these inquiries have already been published and have led to the circulation by the War Office of a memorandum to all medical officers with the forces at home or abroad with regard to their application in practice. The Medical Research Committee have also maintained three members of Sir Almroth Wright's staff in work under his direction at the inoculation department of St. Mary's Hospital. It is proposed in the immediate future to add to Sir Almroth Wright's staff at Boulogne two senior bacteriologists to follow special lines of research arising in connexion with his own work. In accordance with the rule laid down for the Civil Service, every member of the committee staff to whom H.M. commission as a military officer has been given receives the amount of his salary from the committee less the amount of his military pay.

Cholera expedition to Galicia.—Dr. John Freeman, with an interpreter, was sent by the committee last autumn to Galicia, where he enjoyed the temporary rank of lieutenant-colonel in the Russian Army, in order to investigate the various strains of cholera infection, endemic or epidemic, in that district, and to bring to this country cultures of the chief strains. It appears important to the committee that these strains should be available for the preparation of vaccines in view of the possible eventuality of a transference of infection to the Allied Forces in the western theatre of war. The results of the expedition were placed at the disposal of the inoculation department of St. Mary's Hospital, which has been able already to supply large quantities of anti-cholera vaccines to the Serbian Government and to the British Forces in the Mediterranean area.

Bilharzia expedition to Cairo.—The committee are supporting by grant from the Medical Research Fund the expenses of inquiries near Cairo by Colonel Leiper and two assistants. This work has in view the application and extension of the results of recent discoveries with regard to the life-history of the species of bilharzia which is endemic in the Nile delta with special reference to the prophylactic measures to be taken for the protection of the visiting forces.

Typhoid bacilli and paratyphoid bacilli, α and β.—Grants have been made for work at Oxford under the direction of Professor Dreyer for the development and application of methods securing accurate measurement of the agglutination reactions in typhoid and paratyphoid infections and for the study of the action of light rays of particular wave lengths used for the separation of bacillus typhosus or paratyphosus in mixtures of these with other organisms. In view of the results of this work the committee are supporting the simultaneous study of the same methods at Boulogne, London, Leicester, and Netley. Investigations of similar problems connected with these infections are being supported at Manchester under the direction of Professor Delépine.

Standardisation of emulsions and sera for agglutination tests (typhoid and paratyphoid).—The committee are engaged in establishing at Oxford, under the direction of Professor Dreyer, a department for the regular standardisation of emulsions and sera for agglutination tests. The standard emulsions and sera will be supplied to military hospitals for the convenience of bacteriologists and for the better coördination of results obtained by different observers at different times and places.

Antiseptics.—At Leeds the committee are supplying assistance to Professor Cohen for the preparation of new chemical substances of antiseptic value. Professor Cohen is working in conjunction with Dr. Carrel and Dr. Dakin, who are making clinical observations in France. At the London Hospital Medical College the committee are supporting the joint investigation by Dr. Fildes and Dr. Rajchmann, with Mr. Cheatle, at Haslar, into certain compounds of antiseptic value. At Edinburgh special inquiries into antiseptics, and into the infections of wounds, under the direction of Professor Lorrain Smith and Professor Ritchie, are also in progress.

Epidemic cerebro-spinal meningitis ("spotted fever").—The committee are supplying the War Office with the services of Dr. M. H. Gordon, temporary Major, who is directing the whole of the routine bacteriological work undertaken in this country in connexion with the study and control of this disease among the military forces. The committee have made grants to provide two assistants for Major Gordon at the central laboratory for cerebro-spinal meningitis established at the Royal Army Medical College, Millbank, and have further supplied assistance at Woolwich, Brighton, Exeter, Newcastle-on-Tyne, Cambridge, Manchester, Cardiff, Bristol, and Devonport for the completion of the whole scheme of distribution of workers organised by the War Office. The committee have initiated special research work by Dr. Colebrook and Dr. Tanner into the methods of sterilising positive "contacts," and this is in progress in the research wards supported by the committee in connexion with the inoculation department at St. Mary's Hospital. Another investigation into certain questions of the mode of infection and of spread of disease is also in progress at the Millbank laboratory.

Neurological Work at Military Hospitals.

The committee have endeavoured to arrange for the better coördination of the study and description by trained observers of the important groups of neurological cases at military hospitals. In conjunction with workers abroad, neurologists in London and at several provincial centres are now working upon a common plan, the committee providing certain printed forms, diagrams, and apparatus. A card index is being compiled for reference to the full clinical records in individual hands. In connexion with this scheme grants are already being made for part-time work by five or six uncommissioned physicians for assistance in the study of these cases.

Performance of Wassermann Tests.

It has been arranged for Wassermann tests to be made at a central laboratory for cases in certain military hospitals where the necessary facilities are absent.

Testing of Salvarsan Preparations.

The direction of the biological testing of salvarsan preparations manufactured in England and France and sold in this country under licence of the Board of Trade has been undertaken by the committee at the request of the Board. The tests are performed by experts approved by the committee and a certificate signed by the secretary of the committee is issued to allow the sale of each batch of which samples have passed satisfactorily the proper tests. The out-of-pocket expenditure incurred in the testing is charged to the manufacturers.

General.

Upon request from Colonel Sir William Leishman, in his capacity of Adviser in Pathology to the Expeditionary Force, reports have been obtained from expert sources upon particular questions, or special inquiries instituted, and the results have been or will be transmitted to him for use. Among the subjects already dealt with have been those of "trench rheumatism," prophylaxis for dysentery, and the prevention of fly-borne diseases.

The committee have made arrangements to assist medical officers working overseas in following the after-history of certain groups of cases after arrival in this country.

THE MEDICAL OFFICERS' ADMINISTRATIVE DUTIES IN RESPECT OF THE PERSONAL BELONGINGS OF THE WOUNDED.

A good deal of complaint has been made about the loss of personal belongings by the wounded during their transport to the rear. This has, of course, happened in every war, is happening undoubtedly in this one, and we are informed on high military medical authority is receiving the most anxious consideration on the part of the authorities to ascertain the cause with a view to its prevention.

From the letter of "An Officer" in the *Times* of May 6th, supported by other testimony, it would appear that the loss usually takes place not in the field but in the field ambulances and the clearing hospitals. He reached the field ambulance with all his belongings strapped to his person, and they were laid by his side during the night, but on his removal next day he was told that they could not be taken on the stretcher with him as it was "against the order." On his refusing to be moved without them, the medical officer in charge finally gave the required permission, and they reached the clearing hospital with him, and were again deposited alongside of him. The following morning the difficulty recurred, and he had "an extremely heated argument with the R.A.M.C. Captain on the subject," but eventually he succeeded in getting his way and he finally had the good fortune to reach his destination with his personal belongings, field-glasses, revolver, haversack containing his money, and so forth, in his possession. There is, however, considerable testimony that many less determined officers, or officers perhaps whose condition was too grave to render such opposition possible, have lost all their belongings. Indeed, one instance is related in the *Times* of the following day, of an officer who, having thus lost all his equipment, claimed, and was granted, £50 compensation from the War Office. Whichever way it is looked at, the wastage thus involved is deplorable. To replace field-glasses, revolvers, and other necessary equipment is a serious and unnecessary tax upon the financial resources of the individual officer; on the other hand, if all officers thus despoiled are to be compensated out of public money it will become an impost as wanton as it should be unnecessary on the public who have to pay the piper. Now, in part, of course, blame attaches to all officers who do not have their property ineffaceably engraved with their name, rank, and regiment, to facilitate their eventual return in case of their going astray, and we are informed that this is the case in very many instances. On the other hand, it is noticeable that the loss is attributed to "orders" about not carrying things on stretchers, and their rigid and perhaps undiscriminating enforcement by medical officers in charge. It is quite understandable that the carrying of heavy packages on the stretcher should be forbidden for obvious reasons; but surely the personal military equipment of an officer should be allowed to accompany him. It is possible that the instances are due to a misapprehension on the part of the medical officer of the significance of the order. This is one of the multitudinous but inevitable extra professional duties of the medical officer which can be mastered only by military training, a fact that is entirely overlooked by those medical men who seem to think that the sole difference between a military medical officer and a medical man exercising his profession in civil life is that the former is engaged merely to practise medicine and surgery on soldiers under conditions of personal strain and danger, instead of on civilians under the ordinary conditions of civil life. But a little reflection will make it obvious that this and many other duties relating to the entire charge of soldiers and their equipment when *hors de combat* must be undertaken by the medical officers or not at all. It would be impossible to have a double staff of officers without greatly increasing expense, overlapping of energy, and division of authority. This system was tried under the old Medical Staff Corps and broke down egregiously. The present difficulty no doubt largely arises from the unprecedented necessity for extemporising a large number of military medical officers, who being unacquainted with all the details of medical military administration, as distinguished from professional services, can hardly do otherwise than interpret the former part of their duties without adequate data for sound judgment.

SOLDIERS' FOOD.

An Army Order issued on May 14th states that in order to make further provision for varying the dietary of units at the discretion of their commanding officers, it has been decided that from May 22nd an additional cash allowance of 1½*d.* per diem will be issued in lieu of ¼ lb. of bread, 1 oz. of cheese, and 1 oz. of jam now drawn by troops at home.

The modified field service scale of rations issuable at home in kind will be as follows:—

1 lb. fresh meat or 1 lb. preserved meat.
1 lb. bread or ¾ lb. biscuit or 1 lb flour.
2 oz. bacon.
½ oz. tea.
2 oz. sugar.
½ oz. salt.
1-20 oz. mustard.
1-36 oz. pepper.

When this ration is drawn a cash allowance of 5½*d.* a day will be issuable. It will be drawn by the officer commanding on the basis of the number of rations drawn in kind, and will be expended by him solely on messing.

In regard to this order it is well known that it is an erroneous policy to furnish too cheap or monotonous a diet, because its adoption tends to encourage disease and render the men unfit. It is to be hoped that the opportunity of varying the diet, furnished by this money allowance, will help to make the food more interesting, a matter of some physiological importance. It should also enable the substitution to be made of articles of equal nutrient value, as for example eggs for cheese, or peas and beans for cereals.

MILITARY MEDICAL OFFICERS AND CONTRIBUTIONS TO MEDICAL JOURNALS.

A large number of military medical officers do not seem to be aware that the King's Regulations prohibit the sending direct to medical journals of articles intended for publication. The War Office has hitherto been lenient in allowing us to submit such articles for approval before publication, but we have been requested to state that Paragraph 453 of the King's Regulations and Orders for the Army requires that such articles should be transmitted through the officer's commanding officer to the War Office, with a request that, if approved, it be forwarded by the War Office to the journal. This regulation applies not only to regular officers but to temporary officers, officers of the Special Reserve and of the Territorial Forces, and it includes all professional communications and case reports from military hospitals or affecting soldiers, as well as accounts of military organisations, hospitals or movements. The Regulation reads as follows:—

> 453. An officer or soldier is forbidden to publish in any form whatever, or communicate, either directly or indirectly, to the press, any military information, or his views on any military subject, without special authority; and an officer or soldier will be held responsible for all statements contained in communications to his friends which may subsequently be published in the press or otherwise. He is not to prejudge questions which are under the consideration of superior

military authority by the publication, anonymously or otherwise, of his opinions, and he is not to take part, in public, in a discussion relating to orders, regulations, or instructions issued by his superiors.

Any information of a professional nature which he may acquire while travelling or employed on duty is to be regarded as the property of the War Department, and is not to be published in any form without the previous sanction of the Army Council, or in India of the Commander-in-Chief.

When application is made for permission to publish any article, &c., the document will be either typewritten or in proof form, and will be submitted in duplicate direct to the War Office (or in India to the Commander-in-Chief). A statement will be enclosed from the authority (if any) under whom the applicant is immediately serving that such authority has no objection to permission being applied for. One of the copies will be retained at the War Office or by the Commander-in-Chief in India, as the case may be, for reference. Permission to publish will apply only to the article, &c., as submitted, and no alterations therein, except of a purely editorial nature, and no additions thereto are to be made subsequently without the authority of the Army Council (or in India of the Commander-in-Chief).

It is added that permission to publish the article will not convey official endorsement of its contents, and that no statement tending to imply official approval or endorsement is to be included in any part of the publication.

British Red Cross and the Order of St. John.—The work that is now being done by these combined organisations is truly enormous. The Hon. Arthur Stanley, M.V.O., M.P., the chairman of the Joint War Committee, writes to the *Times* that not only in France and Belgium are continuously increasing demands making themselves felt, but they have also had to follow the progress of our troops and those of the Allies abroad, so that Malta, Egypt, the Dardanelles, East Africa, Rhodesia, Serbia, and Montenegro are among the countries that look to it for help in addition to the 900 hospitals at home to which it supplies stores, motor ambulances, &c. The ever-increasing activities entail a constantly increasing expenditure, which amounts at the present to about £3000 a day.

Lord Lansdowne has been elected chairman of the British Red Cross in the room of the late Lord Rothschild.

The Zeppelin Threat: Surgical First Aid for the Metropolis.—London passed recently into and out of a Zeppelin scare, and it seems to us that the insouciance of the moment is almost as inexplicable as the panic which preceded it. Germany possesses Zeppelins, it is proved that they can easily reach London, and we know that the Germans would love to learn of their arrival. On the other hand, the metropolis is believed to be as adequately armed as possible against aerial attack. But supposing a raid should occur, it is well that it should be widely known that the medical profession has made certain preparations that are sure to be very useful. Existing organisations, it was felt, might not be able adequately to cope with a sudden demand for first aid to a large number of injured civilians, and in order to meet such an emergency the following steps have been recommended and adopted by the Royal Society of Medicine: To ascertain what hospitals, infirmaries, and dispensaries could do in the event of civilians being injured in their neighbourhood, firstly, in the matter of provision for first aid, how many individuals they could receive and treat, then to be transferred as quickly as possible to their homes, to hospitals, or to nursing homes; and secondly, how many they could receive for complete treatment. A map of the London area has been prepared and marked, showing these receiving centres with the number of cases receivable. If the map revealed that any district had no receiving centre, say within a radius of one mile, application was made to the local authorities inviting them to provide some suitable place—a town hall, a public bath, a library, or a school—to which the police and helpers might be directed to convey the injured. The local authorities would provide an adequate supply of the material required for first aid, and the committee have drawn up a list of such material with prices, and have arranged with some surgical supply company to provide at cost price. Emergency centres have been marked on the map, and copies of the map or full topographical particulars have been sent to every police office. If police offices are not already supplied with a map showing the position of every ambulance, whether County Council, St. John, or Bischoffsheim, such maps can be supplied. A list of surgeons, general practitioners, and district nurses willing to help in each district has been prepared, with names and full addresses, and (when possible) telephone numbers, and a copy of each district list has been sent to each police office in the district.

The scheme, we are informed by Mr. J. Y. W. MacAlister, upon whom the organisation has devolved, originated in a suggestion made by Dr. H. Moreland McCrea, and a similar scheme has been organised for the East Coast with the coöperation of the War Office.

Vacancies for Medical Officers.—We are informed that there are still a few vacancies for medical men wishing to take commissions in the 1st London (City of London) Sanitary Company. The duties of this company consist in organising and supervising the sanitary work of the army at the front and at home. It is desirable, therefore, that medical men applying for commissions in this company should have a knowledge of sanitation. The posts are especially suitable for men in the public health or education service, who can be released by their councils for military work. Those joining at once may expect to be ordered abroad at an early date. Applications for commissions should be made to the Officer Commanding, 1st London (City of London) Sanitary Company, Room B.6, Duke of York's Headquarters, Chelsea, London, S.W.

Behind the Battle Lines in France.—A report has been issued on three months' work carried on by the War Victims' Relief Committee of the Society of Friends. In response to an appeal from the Prefect of the Marne the Society of Friends undertook the administration of a maternity hospital at Châlons, a town famed in history as the site of the great battle in which Attila and his Huns were defeated by the Romans in 451. The hospital has been established on the initiative of Dr. Hilda Clark in a pavilion of the Asile des Vieillards et Hospice de Mendicité, an institution for homeless old people of the department. After necessary alterations had been made and much cleaning done it was opened on Dec. 6th. On the first floor are two long wards containing 28 beds in all, with a small ward partitioned off it. Below on the ground floor is the crèche to which older children may be brought. Here within sound of the guns, but in peace and comfort, the mothers rest, and here their babies are born. This maternity home is for those whose homes have been destroyed, the majority being refugees from the Ardennes or from Rheims and the occupied portion of the Marne. The total number of babies born was 63; no illness had occurred attributable to the confinement. Excellent work in various ways is carried on from this centre. An out-patients' department has been opened. Wooden huts have been built and roofless cottages repaired for those who have had their homes ruined. It is intended to render relief by the distribution of seeds, so that some at least of the vegetables upon which the people depend so largely for food will be available. The members of the expedition numbered originally 32, half of whom were doctors and nurses. Since leaving England at the beginning of November the numbers have been increased to some 70 workers, by whom much is being done to help the civil population who have suffered so cruelly from the effects of the war. The relations with the French military doctors have been most pleasant, and every assistance has been given by the officials, who fully appreciate these practical expressions of sympathy.

The Voluntary Aid Detachments.—The Voluntary Aid Detachments are sending volunteers to fill the ranks of nurses in the army, and numerous applicants have been critically interviewed by a Standing Committee at Devonshire House. The members of these detachments must have leave to apply from their commandant and county director. They must hold first aid and home nursing certificates, wear the regulation uniform, live under military discipline, and be inoculated against typhoid fever. After a month's probation they are called upon to sign for one year or the duration of the war. A salary of £20 a year is offered, and travelling, board, lodging, and washing expenses are paid, an allowance being made also of £1 per quarter for maintenance of the uniform.

Medical News.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—A Comitia was held on May 13th, Dr. Frederick Taylor, the President, being in the chair. The following Members, who were elected to the Fellowship at the last meeting, were admitted as Fellows of the College: Dr. Archibald Donald, Dr. George Gavin Morrice, Dr. Thomas Beattie, Dr. Noel Dean Bardswell, Dr. Frank Cecil Eve, Dr. John Hay, Dr. George William Watson, Dr. Reginald Charles Jewesbury, Dr. Edwin Greaves Fearnsides, Dr. John George Adami, and Dr. Grafton Elliot Smith. There being no further business the President dissolved the Comitia.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At a meeting of the Comitia of the Royal College of Physicians of London on April 29th, and of the Council of the Royal College of Surgeons on May 13th, diplomas of L.R.C.P. and M.R.C.S. were respectively conferred upon 103 candidates (including two ladies) who have passed the Final Examination of the Conjoint Board in Medicine, Surgery, and Midwifery, and have complied with the by-laws. The following are the names and medical schools of the successful candidates:—

Alan Colpitts Ainsley, B.A. Cantab., Cambridge University and London Hospital; William Guy Embleton Allen, St. Bartholomew's Hospital; David William Jabez Andrews, Middlesex Hospital; Frank Longstaff Apperly, B.A. Oxon, Oxford and Dublin Universities; Joseph Herbert Bayley, London Hospital; William Kenneth Bigger, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Cyril Mary Brophy, University College Hospital; Johannes Karel Joseph Chambry, Amsterdam and St. Mary's Hospital; Francis Bernard Chavasse, B A. Oxon., Oxford and Liverpool Universities; Percival Cheal, London Hospital; Ying-Jue Cieh, King's College and St. Thomas's Hospital; Eric Clarence Cline, Guy's Hospital; Hugh Michael Collins, Madras and London Hospital; Wilfred Leigh Cox, Middlesex Hospital; Reginald Curle, Guy's Hospital; Edmund Sheppard Cuthbert, St. Bartholomew's Hospital; Ernest Ivon Davies, Cardiff and Charing Cross Hospital; John Kenyon Davies Cardiff and St. Bartholomew's Hospital; Wilfred Angel Easton and Cyril Henry Edwards, L.D.S. Eng., Guy's Hospital; Moustafa Fahmy, Cairo and London Hospital; Nashed Fahmy, Cairo and King's College Hospital; Israel Feldman, jun., and Israel Feldman, sen., London Hospital; Francis John Folinsbee, M.D. West. Univ., Western University; Annie Mary Cecilia Forster, Royal Free Hospital; Harold Gardiner-Hill, B.A. Cantab., Cambridge University and St. Thomas's Hospital; George Cowley Gell, L D.S. Eng., Middlesex Hospital; Colin Charles Gordon Gibson, Guy's Hospital; Bernard Heynes Greensill, Birmingham University; John Richard Griffith, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Harold Stanley Groves, Guy's Hospital; William Tudor Gwynne-Jones, London Hospital; George Habgood, B.A. Cantab., Cambridge University and London Hospital; Stanley Allman Hall, Middlesex Hospital; Robert Hargreaves, B A. Cantab., Cambridge University and University College Hospital; Cyril Edward Harrison, Middlesex Hospital; Henry Saumarez Hensman, Madras and London Hospital; Rupert Conrad Hewitt, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Wallace Hillbrook, B.A. Cantab., Cambridge University and St. George's Hospital; Richard Annesley Holmes, L.M.S.S.A. Lond., Guy's Hospital; Rhys Bevan John, B.A. Oxon., Oxford University and Westminster Hospital; David Rees Jones and Nicholas Edward Kendall, Guy's Hospital; John Scott Kennedy, Cambridge University and St. George's Hospital; Hugh James McCurrich, Bristol University and St. Bartholomew's Hospital; *Alexander Joseph Victor McDonnell, London Hospital; Archibald McInnis, M.B. Toronto, Toronto University and London Hospital; Samuel Mallinick, Halle and London Hospital; Ganapathy Mallya, Madras and St. Bartholomew's Hospital; Alwyne Harold Manfield, London Hospital; Charles Jennings Marshall, M.D., B.S. Lond., Charing Cross Hospital; Robert Paul Scott Mason, Middlesex Hospital; Bireswar Mitra, L.M.S. Calcutta, Calcutta Medical College and Guy's Hospital; Cotton Grimley Tenison Mosse, B.A. Cantab., Cambridge University and London Hospital; Newman Frederick Norman, St. Bartholomew's Hospital; Duncan Collingwood Ogilvie, Middlesex Hospital; Thomas Owen, Cambridge University and St. Bartholomew's Hospital; Cuthbert Felix Oliver Pandithesekere, Ceylon Medical College and University College Hospital; Owen Parry-Jones, London Hospital; Edward Crosby Peers, Guy's Hospital; Walter Spencer Johannes Peiris, Ceylon Medical College and London Hospital; Lloyd Desbat Phillips, University College Hospital; Harold Dobson Pickles, Leeds University; Stanley Victor Percy Pill, St. Mary's Hospital; Raymond Fearle Pinson, Birmingham University; Garnet Wolseley Pool and Charles Leslie Grove Powell, St. Thomas's Hospital; John Wootton Rammell, London Hospital; Douglas Oliver Richards, Guy's Hospital; Arthur Eaton Richmond, St. Thomas's Hospital; Alexander Iskander Rihan, Constantinople and St. Bartholomew's Hospital; Gordon Wilfrid Richard Rudkin, University College Hospital; Basil Sampson, Guy's Hospital; *Saroz Kumar Sanyal, London Hospital; Charles Harley Savory, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Ellis Herbert Sydney Scarr, Manchester University; John Godfrey Bradley Smith, St. Bartholomew's Hospital; John Aubrey Brooking Snell, B A. Cantab., Cambridge University and University College Hospital; Theodore Howard Somervell, B.A. Cantab., Cambridge University and University College Hospital; Hugh Gordon Sparrow, St. George's Hospital and Durham University; George Sydney Stathers, Cambridge University and St. Bartholomew's Hospital; Robert Gee Sterling, London Hospital; David Page Thomas, St. Bartholomew's Hospital; Donald Carmichael Thomas, St. Thomas's Hospital Rufus Clifford Thomas, Westminster Hospital; Humphrey Quentin Forsyth Thompson, Guy's Hospital; Ralph Reakes Thompson, London Hospital; Joseph Russell Tibbles, Aberdeen University and London Hospital; Edgar James Tyrrell, M.B., B.S.Durh., Durham University; John Ernest Alfred Underwood, B.Sc. Lond., University College Hospital; Shankarlal Kunvarji Vaidya, L.M.S. Bombay, Bombay University and London Hospital; William Ernest Wade, Cardiff and Charing Cross Hospital; Percy Wallice, Cambridge University and London Hospital; Karl Johan Fredrik Westman, Guy's Hospital; Edward Scott White, B.Sc. Bristol, Bristol University; Eva Muriel White, Royal Free Hospital; Hugh Anthony Bulstrode Whitelocke, B.A. Oxon., Oxford University and King's College Hospital; John Douglas Wilkinson, St. Thomas's Hospital; Cyril Mathias Williams, Cardiff and St. Mary's Hospital; Gerald Richard Courtenay Wilson, St. Thomas's Hospital; William Bernard Wilson, St. Bartholomew's Hospital; and Guy Walker Woodhouse, B.A. Cantab., Cambridge University and St. Thomas's Hospital.

* Both diplomas conferred on May 13th.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—An ordinary meeting of the Council was held on May 13th, Sir Watson Cheyne, the President, being in the chair. Mr. Frederick George Larkin was introduced, and after signing the by-laws and making the required declaration was admitted a Fellow of the College. Mr. J. Hutchinson was introduced, and the President handed to him the Jacksonian prize for the year 1914, together with a document declaratory of the award. Mr. J. F. Colyer was introduced, and the President handed to him the John Tomes prize for 1912–14, together with a document declaratory of the award. It was resolved to issue diplomas of Membership to 103 successful candidates. The secretary reported the delivery of three demonstrations in the Museum by Mr. Shattock, the pathological curator.—At the Primary Fellowship Examination in Anatomy and Physiology held on May 5th, 6th, 10th, and 11th, 42 candidates presented themselves, of whom 33 per cent. were approved and 67 per cent. were rejected. The following are the names and schools of the successful candidates:—

Gustave Adler, London Hospital; Reginald Harold Bridge, M.B., Ch.M. Sydney, Sydney University and Middlesex Hospital; William Bashall Gabriel, Middlesex Hospital; David John Harries, M.D., B.S., B.Sc. Lond., L.R.C.P., M.R.C.S., Cardiff and University College Hospital; Jack Joffe, Guy's Hospital; John Isaie Kühne, King's College; Charles Jennings Marshall, M.D., B.S. Lond., L.R.C.P., M.R.C.S., Cardiff and Charing Cross Hospital; Francis Courtenay Mason, Middlesex Hospital; Arthur Morford, B.Sc. Lond., St. Bartholomew's Hospital; John William Glanmor Phillips, St. Mary's Hospital; Raghunath Dadoba Shirwalkar, B.A. Bombay, Bombay University and University College Hospital; Gilbert Innes Strachan, M.D. Glasg., Glasgow University and Middlesex Hospital; Charles Maitland Titterton, St. Bartholomew's Hospital; and David Percival Dalbreck Wilkie, M.D., Ch.B. Edin., Edinburgh University.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN: SCHOLARSHIP GIVEN BY HER MAJESTY THE QUEEN.—The Queen has given the sum of £250 to pay for the training and expenses of a student at the London (Royal Free Hospital) School of Medicine for Women for a five years' course. The money is part of a gift to the Queen from the wives of Freemasons to help members of the professional classes who may be in difficulties owing to the war. The council of the London (Royal Free Hospital) School of Medicine for Women will award the scholarship in July, 1915, to a student who intends to begin a course of study in the October following. The scholarship will be of the value of £50 a year for five years, subject to the student pursuing her course to the satisfaction of the council. Candidates must have passed a preliminary arts examination recognised for purposes of registration by the General Medical Council, or the London Matriculation, or an examination which gives exemption from it. Forms of application can be obtained from the secretary of the school, and must be returned filled in not later than June 24th, 1915, accompanied by two testimonials, one of which must be from a previous teacher, and by a statement of financial circumstances with special reference to difficulties due to the war. Selected candidates will be interviewed, and a medical certificate of sound health may be required. In the event of the council deeming it necessary, an examination will be held consisting of a general knowledge paper and an essay.

UNIVERSITY OF LONDON, UNIVERSITY COLLEGE.—A new edition of the University College, London, "Pro Patria" is in course of preparation, and will be issued shortly. Past and present students, or their relatives and friends on their behalf, are invited to send full particulars of the capacity in which they are serving the country at the present time. Particulars of rank, ship, and regiment should be addressed to the Publications Secretary, University College, London (Gower-street, W.C.).

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Reconstruction of the Government.

ON Wednesday, May 19th, Mr. ASQUITH announced that steps were in contemplation involving the reconstruction of the Government on a broader political basis.

The Whitsuntide Holidays.

On the same evening both Houses agreed to adjourn for the Whitsuntide holidays until June 3rd.

Immature Spirits and the Preparation of Medicines.

Several times the attention of the Government was drawn during the past week to apprehensions that the compulsory bonding of immature spirits under the Immature Spirits Bill would interfere with the manufacture and use of medicinal preparations in which spirits played a part. Assurances have been given, and amendments introduced into the Bill, for the purpose of making clear that there is no intention that any such interference will take place.

In committee on the Bill in the House of Commons on Monday, May 17th, Mr. GLYN-JONES pointed out that as he read the Bill, laudanum and other tinctures were definitely included in the provision that no immature spirits should be delivered for home consumption. It was true that immature spirits could be by a specified exception supplied to manufacturing chemists for the manufacture of laudanum, but under the Bill they could not deliver it for home consumption for three years.

Sir JOHN SIMON, the Attorney-General, said that the honourable Member feared that the withdrawal of spirits by manufacturing chemists would mean that some heavy duty would be imposed on the spirits that were used in making such things as laudanum. The honourable Member had already the assurance of the Chancellor of the Exchequer that that was not so and an assurance from him also. He again said that it was not so. When the House came to consider the question of the taxes on spirits, the honourable Member would find that there was nothing whatever in the proposals of the Government which would put the manufacturing chemist at a disadvantage as compared with what he was before. The clause did not affect in the least the sale of laudanum by anyone authorised to sell it. The only time when the clause of the Bill would operate was when spirits passed out of a bonded warehouse. Inasmuch as no manufacturing chemist ever made laudanum in bond, he would use the spirit after it had been taken out of bond.

At a later stage, on the motion of Sir JOHN SIMON, an amendment was inserted in the Bill laying down that the restriction against the removal of immature spirits from bond should not apply to spirits delivered for purposes for which they might for the time being be delivered free from all duty "or mixtures, compounds, or preparations in respect of the spirit contained in them or used in their preparation or manufacture."

Mr. GLYN-JONES, commenting on this amendment, said that with words inserted there would be no difficulty about any duty on such a compound as landanum or other like compounds, and so far as he was concerned about this particular point he had been met. How much further the words went he was not in a position to say.

On Tuesday, May 18th, the Bill was considered on report.

Mr. GLYN-JONES moved to add to Clause 1 the following provision:—

> "Nothing contained in this section shall interfere with the supply of rectified spirits of wine for the purpose of making medicines to registered medical practitioners, hospitals, and to persons, firms, and bodies corporate entitled to carry on the business of chemists and druggists."

The honourable Member said that he had received communications from the Pharmaceutical Society of Great Britain and also from the General Medical Council requesting that this alteration should be made in the Bill. They as experts were satisfied that the Bill as it stood seriously interfered with obtaining rectified spirits of wine for the purpose of making medicine. The Pharmaceutical Society had forwarded to him a copy of a letter which it had sent to the Chancellor of the Exchequer. In it it was stated that out of 427 preparations in the Pharmacopœia, in 263 rectified spirits of wine formed a necessary ingredient. As the law now stood it was illegal for anyone to make these preparations without rectified spirits of wine. Out of 20,000 physicians' prescriptions examined 2521 contained Pharmacopœia ingredients made with rectified spirits, and in 343 rectified spirits of wine were actually ordered as a separate ingredient. The British Medical Association had also sent a letter to the Chancellor of the Exchequer saying that they viewed with great concern the provisions of the Bill, inasmuch as it would be impossible for medical men who dispense their own medicines, and also for pharmacists who dispense medicines, to obtain rectified spirits of wine under the Bill as it stood.

Mr. LLOYD GEORGE accepted the provision proposed by Mr. GLYN-JONES. It was embodied in the Bill.

The Bill was afterwards read a third time.

Mental Treatment Bill.

This Bill has been dropped.

HOUSE OF COMMONS.

WEDNESDAY, MAY 12TH.

Motor Ambulances at the Front.

Sir GEORGE SCOTT ROBERTSON asked the Under Secretary for War whether there was a deficiency in motor ambulances for the carrying of British wounded from the front to the hospitals; whether this deficiency was particularly noticeable after the recent fighting at Neuve Chapelle; whether he was aware that charitable organisations anticipated no difficulty in purchasing such ambulances from the manufacturers provided sufficient funds could be collected; and, supposing the facts were as alleged, would he say why the Government failed to provide sufficient mechanical transport for the service of its wounded soldiers.—Mr. TENNANT replied: No, sir, there is no such deficiency, nor is there any truth that it was particularly noticeable after the recent fighting at Neuve Chapelle. On the contrary, I am informed that the work of the motor ambulance convoys throughout the battle was deserving of special praise.

Sir GEORGE SCOTT ROBERTSON: Is it not a fact that the Red Cross Association has made the allegations referred to in the question and has asked for further motor ambulances?—Mr. TENNANT: I have no knowledge of any such allegation being made by the Red Cross Association, and I should be very much surprised if they have made it.

Medical Men in the Ardee Union.

Mr. PATRICK WHITE asked the Chief Secretary to the Lord Lieutenant of Ireland whether, having regard to the prolonged controversy which had existed between the elected representatives of the people of the Ardee union and the Local Government Board regarding the appointment of local doctors and the area of their duties, and to the fact that numerous complaints had been made that the arrangements made by the Local Government Board had worked injuriously to the sick poor, he would appoint a small committee to inquire into the matter and report on it.—Mr. BIRRELL answered: The present medical relief arrangements in the Ardee union have been in operation for the past ten years and are satisfactory as regards the provision made for the medical care and treatment of the sick poor. Ardee union is more favourably circumstanced as regards the number of dispensary doctors employed than most unions in Ireland, and there is no necessity whatever for reopening this question. At the present time, when it is difficult to obtain medical officers for existing dispensaries, the creation of a new office is highly undesirable.

Isolation Hospitals at Hull.

Replying to Mr. GEORGE ROBERTS, Mr. HERBERT SAMUEL (President of the Local Government Board) wrote: I am informed that the following cases were under treatment in the isolation hospitals of the corporation of Kingston-upon-Hull on the 6th inst.:—City Hospital, Hedon-road: measles, 2; scarlet fever, 56; diphtheria, 58; tuberculosis, 22; German measles, 8; German measles and acute rheumatism, 1; German measles and scarlet fever, 1; sent in for typhoid but proved to be scarlet fever, 1; sent in for typhoid but proved to be pneumonia, 1. Evan Fraser Hospital, Sutton: measles, 1; scarlet fever, 47; and diphtheria, 1.

Vaccination against Cerebro-Spinal Meningitis.

Mr. SUTTON asked the President of the Local Government Board whether he was aware that the medical officer of Salisbury had issued a notice to householders advising vaccination against cerebro-spinal meningitis; what was the nature and substance of the vaccine used for the purpose; and could he say how many of the inhabitants of Salisbury had been inoculated at the public expense.—Mr. HERBERT SAMUEL wrote in reply: The answer to the first part of the question is in the affirmative. The vaccine used contains dead meningococci, and was prepared and standardised by the Lister Institute. Approximately 2600 of the inhabitants have been inoculated at the public expense.

THURSDAY, MAY 13TH.

The Mental Treatment Bill.

Mr. RENDALL asked the Under Secretary for War what arrangements had been made by the War Office to provide hospital treatment on purely medical lines for cases of nerve strain among the rank and file where each case might be sifted and diagnosed on arrival in England before being placed in charge of medical officers (Royal Army Medical Corps) who had been taken over from the asylum service.—

Mr. TENNANT said in reply: At large hospital centres in France specialists in nervous diseases not alienists, see all cases of nerve strain and determine to which clearing hospital the cases should be sent on arrival in England. At these hospitals the cases are carefully gone into, and those who are suitable are transferred to certain special hospitals which are quite distinct from what my honourable friend calls the asylum service.

Mr. RENDALL: Will the soldiers who are placed in such hospitals, which are really asylums, have the same right of appeal against decisions as ordinary civilians?—Mr. TENNANT: I do not quite understand the question. Perhaps my honourable friend will put a fresh question.

Mr. RENDALL asked the right honourable gentleman whether he would consider the advisability of providing for the treatment of transiently acute cases of mental disturbance among soldiers by the methods applicable to delirious (toxic) cases in general hospitals, with a view to keeping them apart from lunacy and asylum management.—Mr. TENNANT answered: The cases mentioned in the question are dealt with at either "D" Block, Netley, or Napsbury Military Hospital. These cases are kept absolutely apart from the certified mental cases and the hospitals are under War Office management.

Mr. RENDALL asked the Under Secretary for the Home Department whether he was aware that by the provisions of the Mental Treatment Bill now before the House the soldier disabled by nerve-strain would be liable, when discharged uncured from the army, to be placed, at the discretion of one doctor, for six months under care and treatment in an institution intended for the insane; that there was no provision in the Bill for any appeal to a magistrate; and would he undertake to propose or accept an amendment whereby the ordinary safeguards extended hitherto to all British subjects protecting them from unjust treatment might be made equally applicable for the protection of soldiers.—Mr. CECIL HARMSWORTH replied: I think that my honourable friend has misunderstood the object of the Bill, which was to secure suitable treatment of cases of nerve-strain without compulsory detention, but I need not go further into the matter, as I hope that arrangements for this purpose may now be made without legislation and that it will not be necessary to proceed with the Bill.

Vaccination in Ireland.

Mr. PATRICK WHITE asked the Chief Secretary to the Lord Lieutenant of Ireland, whether the same facilities existed in Ireland as in England to enable conscientious objectors to have their children exempted from vaccination; and, if not, whether, having regard to the growing demand for exemption in Ireland, he would take steps to introduce legislation assimilating the law in the two countries.—Mr. BIRRELL replied: The answer to the first part of the question is in the negative. I am not aware of any general demand for a change in the existing law as regards Ireland, and I do not consider the present a suitable opportunity for legislation on this subject.

Transmission of Disease by Flies.

Mr. BOLAND asked the President of the Local Government Board what steps, if any, had been taken to inform the public as to the danger to health involved in the transmission of disease by flies under existing war conditions; whether any leaflets had been published on the subject, and, if not, whether the leaflet published by the Zoological Society of London would be utilised; and whether steps would be taken to set up a small committee to deal with the subject.—Mr. HERBERT SAMUEL answered: The Board have issued seven reports on "Flies as Carriers of Infection," and they have during the last few years warned local authorities by circular at the beginning of summer of the dangers of allowing accumulations of refuse, which may form breeding grounds for flies, to remain in the neighbourhood of dwellings. They had for some time past been urging individual local authorities who are not dealing satisfactorily with the refuse of their districts, to improve their methods. In a circular letter which is about to be issued, attention will again be drawn to the matter. The War Office and my department are coöperating in this as in other matters affecting the health of the troops and of the civil population. A number of local authorities have issued posters and leaflets on the subject. I am considering the preparation and issue by the Local Government Board of a series of model leaflets on this and other health subjects, which local authorities could use if they so desired.

Lord ROBERT CECIL: Can the right honourable gentleman say whether any communication has taken place between the English and French authorities upon this point?—Mr. HERBERT SAMUEL: Not so far as I am aware.

Cardiff Mental Hospital and the War Office.

Mr. TYSON WILSON asked the Under Secretary for War whether the Cardiff Mental Hospital had been taken over by the War Office for the accommodation of wounded soldiers; and, if so, whether he could say where the patients that were being treated in the hospital had been transferred; and whether arrangements had been made for their relatives to visit them.—Mr. TENNANT furnished the following written answer: The Cardiff Mental Hospital is being taken over. The patients have been removed under arrangements initiated by the Board of Control with the approval of the Home Secretary to the following asylums: Gloucester, Hereford, Monmouth, Newport, Glamorgan, Carmarthen, Brecon, and Radnor. In reply to the last part of the question, the relatives will, of course, have facilities for visiting.

Schools for Mothers.

In the course of the debate on the Education Estimates Mr. J. A. PEASE (President of the Board of Education) made reference to the work that was being done by schools for mothers. Nothing was more important in regard to the prevention of infantile mortality and the preservation of the health of small children than that the mothers should be educated how to rear them. Recently the Local Government Board had been enabled to help forward this work by grants for maternity and child welfare. The Board of Education had been helping something like 151 schools for mothers. In order to prevent overlapping it had been decided that all matters connected with institutions provided by sanitary authorities, as well as matters connected with voluntary infant consultation, should be supported out of grants by the Local Government Board. All matters connected with schools, as defined by the regulations of the Board of Education, should be in the province of the Board of Education. In that way he believed a satisfactory working arrangement would be arrived at which would secure not only a proper bringing up of the children but due attention to health. The great object was to get the children to the schools in a healthy condition. If that was achieved, the children would learn a great deal more, and there would be much less waste of public money than there had been in the past. The demand for women in many directions had produced also a demand for women who had babies or very small children in their homes. One of the great social dangers in the country had been that these children were not properly provided for when their mothers were at work. By a system of crèches which had been supported by the Board of Education and by grants very good work was being done. There were now 77 institutions of this kind in the country. He did not think that the value of that kind of work could be overrated.

Finances of Universities.

Mr. PEASE in a subsequent part of his speech referred to the loss of fees which universities had experienced through the withdrawal of students for war service. Consideration, he said, was being given by a departmental committee which would report to the Treasury on the advisability of enabling the provincial universities other than Oxford and Cambridge to tide over the financial position into which the war had thrown them. He had not much to say with regard to Wales, but in connexion with university work there it was noteworthy that all parties concerned were united in a real endeavour to organise their university education and were now considering the whole matter. In the past months a departmental committee had been sitting to consider the best means of founding a Welsh medical school at Cardiff.

TUESDAY, MAY 18TH.

The Notification of Births Act.

Lord ROBERT CECIL asked the President of the Local Government Board whether, having regard to the importance, especially at the present time, of taking steps to reduce infant mortality, he would consider the desirability of amending the Notification of Births Act so as to confer an express power on local authorities to provide health visitors, maternity centres, and similar arrangements for promoting infant welfare.—Mr. HERBERT SAMUEL replied: There can be no division of opinion as to the great importance of measures for reducing infant mortality, and I may perhaps remind the noble lord that the Government have undertaken to make substantial grants in aid of maternity centres and other agencies for infant welfare, which are approved by the Local Government Board. It would, I think, be an advantage if the Notification of Births Act were amended in the way suggested in the question. Notifications are of little value unless they are followed up by health visiting and by the provision of advice and skilled assistance to mothers. The Act itself confers on local authorities no express power to do this work, and at present recourse has to be had to powers in other Acts which were not framed with infant welfare particularly in view. One result is that the powers of a county council adopting the Act differ from those of a district council. If it were shown that a small amending Bill such as is suggested would meet with general support, I should be glad to consider the early introduction of such a measure.

Rating of Houses used as Hospitals.

Mr. WHELER asked the President of the Local Government Board whether his attention had been called to the fact that many private houses now being used as hospitals for the wounded in the war were liable to be rated; and whether he would consider introducing a Bill to enable their exemption from rates where the guardians were satisfied that such houses were *bonâ fide* used solely for such purpose and that only those wounded and those necessarily attendant on them resided therein.—Mr. HERBERT SAMUEL said in reply: If a local authority, in cases of the kind referred to, should see fit to exempt the premises from rating, the Board would not in the present circumstances wish to take exception to such a course.

Medical Officers in Scotland and the War.

Mr. GINNELL asked the Secretary for Scotland to state the number of medical officers of local administrative bodies in Scotland who had volunteered for service in the present war; the number of them serving; and the treatment of them by those bodies generally in regard to continuance of salary, payment of substitute, and keeping their positions vacant for them.—Mr. MCKINNON WOOD wrote in reply: I have no information as to the total number of medical officers of local authorities in Scotland who have volunteered for service. There are, so far as I am aware, 17 public health medical officers, 32 Poor-law medical officers, and 26 school medical officers (of whom some may also be health officers), who are or have been serving. I am informed that their posts are as a rule kept open for them. Health officers either receive full pay and nominate their own substitutes, or if the local authority makes arrangements for carrying on their work, receive full pay less military pay or a part thereof. In the case of the school medical officers, the local authorities have made arrangements to secure them against any financial loss. I have no information as to the financial arrangements in the case of Poor-law medical officers.

The Opium Conference.

Mr. THEODORE TAYLOR asked the Under Secretary of State for Foreign Affairs whether, with a view to restrict the use of morphia to medical and legitimate purposes, it was the intention of the British Government to sign the special protocol prepared as the result of the third Hague Opium Conference in June, 1914, which had already been signed by China, the United States, and the Netherlands.—Mr. PRIMROSE answered: A protocol has been opened at The Hague to receive the signatures of those Powers who intend to put the Opium Convention into force without waiting for the ratification by all the signatory Powers. I do not, however, consider it practicable in the existing circumstances to take any action at present beyond depositing the ratification of the signature of the British delegates, which has already been done. It has been the guiding principle of His Majesty's Government throughout the protracted negotiations that, though fully prepared to make all useful sacrifices in the interests of humanity, they could only secure the objects of the Convention—namely, the suppression of the illicit trade not only in morphia, but also in opium, cocaine, and other noxious drugs—by practically universal international coöperation. The attainment of those objects is not, in the opinion of His Majesty's Government, likely to be hastened by action on their part in the sense indicated by the honourable Member.

WEDNESDAY, MAY 19TH.

Medical Men and War Service.

Mr. JOYNSON-HICKS asked the Under Secretary for War whether he would give the number of doctors in the Royal Army Medical Corps on the active and Special Reserve lists at the present time; and what was the number in the Territorial Medical Corps.—Mr. TENNANT answered: The numbers are as follows:—

Army Medical Service and R.A.M.C.	1008
Re-employed retired R.A.M.C. officers	174
Special Reserve R.A.M.C. officers	623
Temporarily commissioned officers	3100
Territorial Force R.A.M.C.	2122
Total	7027

Mr. JOYNSON-HICKS asked the right honourable gentleman whether some 5000 medical men had volunteered their services during the war, and how many of these were now in actual service; and whether there was any scarcity of medical officers either at home or at the front.—Mr. TENNANT replied: More than 5000 medical men have offered their services, and 3100 have actually been appointed. This is in addition to officers of the Special Reserve. There is not at the moment any scarcity of medical officers either at home or at the front, but a further large number will be required.

Mr. JOYNSON-HICKS further asked the right honourable gentleman whether he could state the number of lieutenants, captains, majors, lieutenant-colonels, and colonels in the Royal Army Medical Corps on July 31st, 1914, and March 31st, 1915, and why there had been no promotions other than those arising in the ordinary course of service from the rank of captain to major.—Mr. TENNANT said in reply: The numbers are:—

	July 31st, 1914.	March 31st, 1915.
Colonels	29	99
Lieutenant-Colonels ...	128	225
Majors	341	185
Captains	379	477
Lieutenants	127	—
Total	1004	986

There have been 14 promotions from captain to major other than in the ordinary course of service.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BLANDY, LIZZIE, M.R.C.S., L.R.C.P. Edin., has been appointed House Surgeon to the Royal Free Hospital.

COX, W. J., M.B., Ch.B. Manch., has been appointed Acting Medical Officer of Health for Luton.

EADIE, W., M.B., Ch.B. Edin., has been appointed Medical Officer of Health and Medical Superintendant of the Fever Hospital, Workington.

HARRIS, DUDLEY RAYMOND, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the New Children's Scattered Home by the Falmouth Board of Guardians.

HUNTER, T. R., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Cardenden District of the county of Fife.

JOHNSTON, G. JAMESON, M.B., F.R.C.S. Irel., has been appointed Honorary Consulting Surgeon to the Royal Hospital for Incurables, Dublin.

JONES, BLACK, M.D. Lond., has been appointed Medical Officer of Health for Builth Wells.

MCDONALD, NIEL, M.B., Ch.B. Manch., has been appointed Resident Medical Officer at the Military Wing of the Royal Free Hospital.

NUNAN, T. J., L.R.C.P. & S. Irel., has been appointed Dispensary Medical Officer for Mountrath.

PIERSE, JOHN A., M.B., B.Ch.N.U.I., has been appointed House Surgeon to the Woolwich Infirmary.

PILLMAN, EMMA C., M.B., B.S., has been appointed House Physician to the Royal Free Hospital.

THOMPSON, J. A., L.R.C.P. & S. Irel., has been appointed Medical Officer for the Tempo Dispensary District by the Enniskillen Board of Guardians.

WELFORD, C. H., M.D. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Staindrop District of the county of Durham.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

ALL SAINTS HOSPITAL FOR GENITO-URINARY DISEASES, Vauxhall Bridge-road, S.W.—House Surgeon for afternoon work only.

ALTON, HANTS. LORD MAYOR TRELOAR CRIPPLES' HOSPITAL.—Two Assistant Resident Medical Officers. Salary as arranged, with board, residence, and laundry.

BIRKENHEAD BOROUGH HOSPITAL.—Female Senior and Junior House Surgeons. Salary £180 and £150 per annum respectively, with board and laundry.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £250 per annum, with apartments, attendance, &c.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Senior House Surgeon. Salary £110 per annum, with board, residence, and attendance.

BOLTON INFIRMARY AND DISPENSARY.—Third House Surgeon. Salary £170 per annum, with apartments, board, and attendance.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £120 per annum, with board, residence, and laundry.

BRIGHTON COUNTY BOROUGH ISOLATION HOSPITAL.—Resident Medical Officer. Salary £200 per annum, with board and lodging.

BRISTOL GENERAL HOSPITAL.—House Surgeon and Casualty House Surgeon, both for six months. Salary at rate of £150 per annum, with board, residence, &c.

BRISTOL ROYAL INFIRMARY.—Throat, Nose, and Ear House Surgeon for six months. Salary at rate of £120 per annum, with board, apartments, and laundry.

BURNLEY, VICTORIA HOSPITAL.—House Surgeon. Salary £135 per annum, with residence, board, and washing.

BURY INFIRMARY.—Senior and Junior House Surgeons. Salary £175 and £150 per annum respectively, with board, residence, and washing.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—Honorary Assistant Surgeon for Ear, Nose, and Throat Department. Also Honorary Assistant Surgeon for Ophthalmic Department.

CARDIFF, WELSH METROPOLITAN WAR HOSPITAL, Whitchurch, near Cardiff.—Junior Resident Surgeon. Salary at rate of £1 per day, with board, lodging, &c.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £200 per annum, with apartments (not board).

CARMARTHEN, JOINT COUNTIES ASYLUM.—Temporary Second Assistant Medical Officer. Salary at rate of £200 per annum, with board, lodging, washing, &c.

CITY OF LONDON LYING-IN HOSPITAL, City-road, E.C.—Resident Medical Officer for four months.

DUMFRIES, CRICHTON ROYAL.—Temporary Assistant Physician, unmarried. Salary at rate of 5 guineas a week, with apartments, board, laundry, and attendance.

EALING, BOROUGH OF.—Medical Officer of Health and School Medical Officer. Salary £700 per annum.

EDMONTON MILITARY HOSPITAL.—Assistant Surgeons and Physicians Salary £1 daily, with residence, board, and lodging.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—House Physician for six months. Salary at rate of £150 per annum, with board, apartments, and washing.

FOLKESTONE, ROYAL VICTORIA HOSPITAL.—House Surgeon. Salary as agreed, with board, residence, and laundry.

GLASGOW FEVER HOSPITALS.—Physician Superintendent. Salary £600 per annum, with free house.

GLASGOW ROYAL MATERNITY AND WOMEN'S HOSPITAL, OBSTETRICAL DEPARTMENT.—Two Indoor House Surgeons and Two Outdoor House Surgeons. Also One Female Outdoor House Surgeon at West End Branch. All for three months.

GRAVESEND HOSPITAL.—House Surgeon. Liberal salary, with board, residence, and washing.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £150 per annum, with board, residence, and laundry.

HARROGATE INFIRMARY.—Resident House Surgeon. Salary £100 per annum.

HULL ROYAL INFIRMARY.—House Physician, unmarried. Salary £105 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging. Also Casualty House Surgeon. Salary at rate of £80, with board and lodging.

KING EDWARD VII. SANATORIUM, Midhurst, Sussex.—Second Assistant Medical Officer. Salary £150 per annum, with board, lodging, and attendance.

LANCASTER COUNTY ASYLUM.—Temporary Assistant Medical Officer. Salary 6 guineas per week, with board, &c.

LEEDS CITY.—Medical Assistant in Public Health Department. Salary £350 per annum.

LIVERPOOL, ROYAL SOUTHERN HOSPITAL.—Honorary Assistant Laryngologist for Ear, Nose, and Throat Department.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.—Lecturer in Physics.

MANCHESTER, ANCOATS HOSPITAL.—Senior House Surgeon. Salary £100 per annum. Also House Physician. Salary £80 per annum.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury, Gartside-street.—Medical Officer for Out-patients' Department. Salary £180 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Fitzroy-square, W.—House Surgeon. Salary £150 per annum. Also Honorary Anæsthetist.

NEWCASTLE-UPON-TYNE, POOR-LAW INSTITUTION AND INFIRMARY, Westgate-road.—Assistant Resident Medical Officer, unmarried. Salary at rate of £250 per annum, with apartments, rations, and washing.

NORTHUMBERLAND, CHILDREN'S SANATORIUM, Stannington.—Female Resident Medical Officer. Salary £200 per annum, with board and washing.

NOTTINGHAM CHILDREN'S HOSPITAL.—Female House Surgeon. Salary at rate of £150 per annum, with apartments, board, and washing.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—Temporary Surgeon in Charge of Out-patients.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Surgeon. Salary £120 per annum, with board, residence, and washing.

PORTSMOUTH WORKHOUSE INFIRMARY, WORKHOUSE, AND CHILDREN'S HOME.—Female Second Assistant Medical Officer. Salary £150 per annum, with apartments, rations, &c.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Physician and House Surgeon for six months. Salary £100 per annum, with board, residence, and washing. Also Assistant Physician.

ROTHERHAM HOSPITAL.—Junior House Surgeon. Salary £125 per annum, with board, lodging, and washing.

ROYAL ARMY MEDICAL CORPS (TERRITORIALS), THIRD 1ST HOME COUNTIES FIELD AMBULANCE, FOREIGN SERVICE UNIT, Maidstone.—Medical Officers.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, W.—Resident Medical Officer.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Resident Medical Officer and Assistant Resident Medical Officer. Salary at rate of £110 and £90 per annum respectively, with board, residence, and laundry.

SALISBURY GENERAL INFIRMARY.—House Surgeon and Assistant House Surgeon, unmarried. Salary £150 and £100 per annum respectively, with apartments, board, lodging, and washing.

SCARBOROUGH BOROUGH.—Temporary Medical Officer of Health. Salary at rate of £400 per annum.

SERBIA, ROADSIDE DISPENSARIES.—Medical Women. Salary £40 for three months.

SHEFFIELD ROYAL INFIRMARY.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.

SHEFFIELD, WHARNCLIFFE WAR HOSPITAL, Middlewood-road.—Resident Medical Officers.

SHREWSBURY, ROYAL SALOP INFIRMARY.—House Physician. Salary at rate of £110 per annum, with board and apartments.

SOUTHAMPTON, PARISH INFIRMARY, Shirley Warren.—Resident Assistant Medical Officer. Salary £200 per annum, with apartments, rations, washing, and attendance.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Female House Surgeon. Salary £150 per annum, with residence, board, and washing.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £120 per annum, with board, lodging, and washing.

SWANSEA EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary £300 per annum.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician. Salary £125 per annum, with board, apartments, and washing.

VENTNOR, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST ON THE SEPARATE PRINCIPLE.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with board, lodging, &c.

WALSALL AND DISTRICT HOSPITAL.—Assistant House Surgeon and Anæsthetist. Salary £150 per annum, with board, residence, and laundry.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.

WARRINGTON, LORD DERBY WAR HOSPITAL.—Resident Physician.

WEST BROMWICH AND DISTRICT HOSPITAL.—House Surgeon and Assistant House Surgeon, unmarried. Salary £150 and £120 per annum respectively, with residence, board, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL.—Resident Medical Officer. Salary £160 per annum. Also House Physicians. Salary £120 and £100 per annum, with board, residence, and washing.

WEST HAM UNION.—Second Assistant Resident Medical Officer and Fourth Female Assistant Medical Officer at Infirmary, Whipps Cross-road, Leytonstone, N.E. Salary £250 and £160 per annum respectively. Also Deputy Resident Medical Officer at Sick Home, 95, Forest-lane, Forest Gate, E. Salary £250 per annum. Also Female Assistant Medical Officer at Workhouse, Union-road, Leytonstone, N.E. Salary £140 per annum. Each with usual residential allowances.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £150 per annum, with board, apartments, and washing.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer and House Surgeon for six months. Salary at rate of £150 per annum, with board, rooms, and laundry.

WORCESTER, CITY AND COUNTY BOROUGH OF.—Female Assistant Medical Officer. Salary £300 per annum.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary £150 per annum, with board, residence, and washing.

WREXHAM INFIRMARY.—Resident House Surgeon. Salary £125 per annum, with board, lodging, and washing.

YORK RETREAT.—Junior Assistant Medical Officer. Salary £200 to £225 per annum, with board, lodging, &c.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Houghton-le-Spring, in the county of Durham; at Swords, in the county of Dublin; and at Earls Barton, in the county of Northampton.

Births, Marriages, and Deaths.

BIRTHS.

BAYNE.—On May 13th, at Hollingwood, Oldham, the wife of Arthur Munby Bayne, M.B., of a son.

CARNARVON BROWN.—On May 12th, at Egdean, Sevenoaks, the wife of A. Carvarvon Brown, M.R.C.S., late of India, of a son.

FOREMAN.—On May 16th, at White Hall, Stourwood-avenue, Bournemouth, the wife of Mr. J. E. Foreman, of a daughter.

KEELING.—On May 16th, at Market Bosworth, the wife of Hugh Nevill Keeling, M.R.C.S., L.R.C.P. Lond., of a son.

MARRIAGE.—On May 15th, at Harley-street, London, W., the wife of Herbert J. Marriage, M.B., B.S. Lond., F.R.C.S. Eng., of a son.

WOOLLEY.—On May 17th, at Lucknow, India, the wife of Major Jasper M. Woolley, I.M.S., of a daughter.

MARRIAGES.

BARNES—NORMAN.—On May 15th, at St. John's, Angell-town, Brixton, Lieutenant Howell Wood Barnes, M.B. Cantab., R.A.M.C., to Sarah Francis, youngest daughter of Frederick Norman, J.P., F.R.C.S.

HENRY—MILNE.—On May 15th, at St. Luke's Church, Chelsea, Arnold Kirkpatrick Henry, M.B., F.R.C.S. Irel., to Dorothy Kate Milne, M.D., B.Ch.

MONCRIEFF—LONGMUIR.—On May 15th, at the Church of the Holy Trinity, St. Andrews, Surgeon Leonard Alexander Moncrieff, M.B., R.N., to Hilda Constance Arnott, youngest daughter of the late Thomas Longmuir and of Mrs. Longmuir, Howard-place, St. Andrews.

DEATHS.

FIELD.—On April 10th, at Wittenberg, in Saxony, Stephen Field, Captain, R.A.M.C.

GOODDEN.—On May 9th, killed in action, near Ypres, Henry Wyndham Goodden, Lieutenant, R.A.M.C., aged 31 years.

PERN.—On May 9th, killed in action, Lieutenant Montague Pern, R.A.M.C., aged 26 years.

SIMPSON.—On May 10th, at Byron-street, Patricroft, William Allan Simpson, M.B., C.M.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE USE OF CHAMPAGNE IN SURGERY.

To the Editor of THE LANCET.

SIR,—I should like again to invite attention to my favourite treatment of surgical shock by rectal injection of a pint of good dry champagne. Since my first communication on the subject was published in THE LANCET of May 17th, 1913 (p. 1416), in which I dealt with the rapid improvement which followed subcutaneous injections of champagne, some local necrosis of skin followed in some later cases, and I abandoned the method in favour of rectal injection (THE LANCET, Sept. 20th, 1913, p. 863), which I have found equally rapid in action, and equally efficacious, without any after complication whatever. It has been the rule in this hospital during the past two years that in all serious operation cases the sister in charge of the patient brings with her a bottle of champagne and a funnel with long rectal tube to the operating theatre. The moment any evidence of shock appears two assistants promptly separate and elevate the legs and buttocks, and the sister administers the injection (pure). Marked reaction is usually established within three minutes. In my original letter I made a statement, which I am pleased to see confirmed by Lieutenant Haycraft in THE LANCET of March 20th, 1915 (Treatment of Acute Emphysematous Gangrene) that "champagne and pituitary extract is a combination that I can strongly recommend." And in the *British Medical Journal* of Jan. 31st, 1914, I stated: "In serious cases of ante-operative toxæmia we have found the placing of the patients out of doors, immediately after operation, to be of immense service, and during the early convalescent stage in such cases we have experimented purposely, and have proved over and over again that there is no drug or anything else equal to the daily administration of a pint of the best dry champagne."

In conclusion, I need only say that these statements have been emphasised by further experience. Soon after my article appeared in THE LANCET a friend forwarded me a French comic paper, in which were depicted a young lady and gentleman arm-in-arm doing a kind of goose-step out of a doctor's house, apparently full of "beans," after receiving their champagne injections "as recommended by Dr. 'Jhon' O'Conor"!—I am, Sir, yours faithfully,

J. O'CONOR, M.A., M.D. T.C.D.,
Senior Medical Officer, British Hospital,
Buenos Aires.
April 18th, 1915.

FLOATING KIDNEY.

A MEDICAL correspondent asks if a floating kidney can be easily diagnosed, and if when diagnosed an operation is indicated. The questions cannot be answered quite briefly. It is certainly possible to diagnose a floating kidney during life, for the normal kidney is capable of very slight movement, while a floating kidney can often be moved many inches from the place where it is found. In many cases it occupies habitually a lower site than normally. The question of operation is by no means easy. While some consider that the results of floating kidney are many and serious, and that in all cases an operation is eminently desirable, these views are not held by perhaps the majority of surgeons or physicians. It is fairly certain that in most cases a floating kidney gives rise to no symptoms, and the patient is none the worse for it, but when a patient is told that she has a floating kidney she begins to have many symptoms, and she ascribes them all to the floating kidney. In the large majority of cases an operation is not needed, and will do no good. It is rarely wise to tell a patient that she has a floating kidney, unless the surgeon or physician is certain that it is giving rise to important manifestations. There is, however, one condition which may be caused by movable kidney which may make an operation necessary. When the altered position of the kidney leads to a kinking of the ureter a hydronephrosis may arise, and this will steadily grow worse unless the kink is done away with.

DR. JOHN GEORGE CHAPMAN.

THE *Nottingham Guardian* of May 4th has published under the heading of "A Nottingham Author and Physician—Friend of George Eliot—Passages from Unpublished Diaries" a long account of a find among the old bookstalls at Sneinton Market, Nottingham. The find consists of some of the diaries of the late Dr. John George Chapman, who was for many years editor of the *Westminster Review* and a London publisher, who was intimately acquainted with many literary people of note, amongst them Charles Dickens and George Eliot, and his acquaintance with George Eliot is described with some detail in the diaries, which are three of Letts's little books dated 1851, 1860, and 1863. Chapman was a very interesting man. He started as a publisher, but took a medical degree at St. Andrews and gave up business. He practised in London at Somerset-street, Portman-square, and became known especially by his persistence in the efficacy of the successful treatment of cholera and diarrhœa by means of the spinal ice-bag, and delirium tremens and the treatment of cerebro-spinal fever by means of ice; also for a new method of treating paralysis by the application of cold or heat along the spine. He also wrote on the abuse of medical charity and on diseases of the nervous system. He died in 1894 in Paris, whither he had retired, as the result of being run over by a cab, and his death was announced in THE LANCET of Dec. 8th of that year.

WHAT IS A CONSULTANT?

To the Editor of THE LANCET.

SIR,—In answer to the question of "Enquirer" in THE LANCET of May 1st (p. 946), I think one may say—in England a consultant may be defined as a medical practitioner, a Fellow or a Member of the Royal College of Physicians or a Fellow of the Royal College of Surgeons, who only sees a patient with, or on the introduction of a general practitioner, and does not attend any patients except in consultation, thus corresponding to the barrister in the sister profession of the law. This is, however, purely a theoretical description, as I do not know anyone in London to whom the description could be applied, although all my medical life has been passed in or near London since 1879. I have heard that one consultant has a notice on his waiting-room table stating that he does not practise as a general practitioner, and I have also been informed that a Guy's man is really a consultant, but I have no experience of these two, and perhaps they may be mythical.

I am, Sir, yours faithfully,
A. CHARPENTIER.
May 12th, 1915.

SEVERE ILLNESS APPARENTLY DUE TO EATING RHUBARB.

M. L. J. (Bristol) writes:—"With reference to the letter of 'M.D.' in your issue of May 8th I had a somewhat similar experience, unmistakably due to eating rhubarb, some five years ago. My age then was about 50, and I should say that I have been all my life a sufferer from neurasthenic dyspepsia of an inveterate type, so that for many years the most rigorous expedients in diet have been necessary. One evening I ate some stewed rhubarb. Though it is not easy to produce emesis in me I was vomiting in a few minutes, was purged, and felt very ill. Bicarbonate of soda, with very small doses of liq. bismuthi and tr. opii, combined with copious use of milk (no other drink), raw eggs beaten up, and meat diet, after some days relieved the gastric symptoms, which then took the form of intense renal and vesical irritation, an abnormal quantity of urine being passed, the necessity to micturate obliging me to rise four or five times every night. With persistent use of milk and bicarbonate of soda the symptoms gradually wore off.

I attributed the poisonous effects to the oxalic acid in the rhubarb acting on a highly neurotic, dyspeptic, and gouty diathesis; but it has been suggested that they were possibly due to the effect of the tannic acid in the rhubarb on a gouty subject. Perhaps it was both. I have known of other people who were always made seriously ill by eating rhubarb."

AN INVITATION FROM HARROGATE.

THE Harrogate corporation has issued an invitation to medical men to visit Harrogate at any time during the next 12 months (excluding the period July 15th to Sept. 30th), and they are offered the free and unlimited use of the baths and waters and complimentary facilities and special rates connected with hotel accommodation. The opportunity is thus given of putting the claim to the test in regard to Harrogate taking rank with those well-known continental resorts now closed to the public on account of the war.

A MEDICAL PRACTITIONER'S DAY-BOOK.

Messrs. Robert Gibson and Sons, of 45, Queen-street, Glasgow, have published a convenient day-book (No. 4) of small size for the use of panel practitioners. It measures roughly $4\frac{1}{2}$ by $8\frac{1}{2}$ inches, and each opening is ruled for a month. Provision is made for the entry of 1440 names, with the necessary particulars required by the Insurance Commissioners. The book, which is compact, should serve to reduce the panel practitioner's clerical work. The price is 1*s*. net, or by post 1*s*. 2*d*.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

FRIDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—Philip Turner, J. D. Rolleston, Sidney Gilford): at 4.30 P.M.

Dr. C. O. Hawthorne: Case of Hemiplegia in a Girl aged 8.
Dr. H. Thursfield: Case of Defective Patellæ and Contraction of Limbs.
Dr. E. Pritchard: Cystic Lymphangioma in Infant.
Dr. E. Pritchard and Dr. M. Richards: Case of Polioencephalomyelitis.
Dr. J. D. Rolleston: Case of Ectrodactyly.
Dr. E. L. Goffe: (1) Case of Deformity of the Left Hand with Constriction of the Right Forearm; (2) Case of Dextrocardia.
And other Cases.

Specimen:
Dr. P. Figdor: Pericarditis in Diphtheria.

Short Paper:
Dr. C. O. Hawthorne: Case of Tuberculous Meningitis.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patients (Mr. E. Gillespie). 2.30 P.M., Medical Out-patients (Dr. T. R. Whipham): Gynæcological Out-patients (Dr. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie). 4.30 P.M., Special Lecture:—Dr. J. B. Banister: The Treatment of Puerperal Sepsis.

TUESDAY.—2.30 P.M., Surgical Operations (Mr. Carson). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out patients (Mr. Howell Evans); Nose, Throat, and Ear Out-patients (Mr. H. D. Gillies). Radiography (Dr. Metcalfe). 3.30 P.M., Medical In-patients (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2.30 P.M., Throat Operations (Mr. Gillies). Children Out-patients (Dr. T. R. Whipham); Eye Out-patients (Mr. R. P. Brooks); Skin Out-patients. 5.30 P.M., Eye Operations (Mr. R. P. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patients (Dr. A. J. Whiting); Surgical Out-patients (Mr. Carson); Radiography (Dr. Metcalfe). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

FRIDAY.—2.30 P.M., Surgical Operations (Mr. Howell Evans). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. E. Gillespie); Eye Out-patients (Mr. R. P. Brooks).

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M. Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

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METEOROLOGICAL READINGS.

(Taken daily at 9.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 19th, 1915.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
May 13	29·690	S.E.	1·27	55	49	46	46	47	Overcast
,, 14	29·850	N.E.	...	102	55	38	41	43	Cloudy
,, 15	30·200	N.	0·04	94	57	41	43	48	Fine
,, 16	30·010	S.E.	...	95	62	46	49	54	Cloudy
,, 17	29·662	S.W.	0·86	72	58	46	53	57	Overcast
,, 18	29·740	N.E.	0·17	91	50	46	46	46	Raining
,, 19	30·020	N.	...	100	63	46	46	50	Cloudy

The following magazines, journals, &c., have been received:—
National Medical Journal, Pediatrics, Tropical Diseases Bulletin, British Journal of Dental Science, Journal of Physiology, Modern Hospital, American Journal of Clinical Medicine, Proceedings of the Royal Society of Medicine, Archives of Pediatrics, Surgery, Gynecology and Obstetrics, American Journal of Surgery, Maryland Medical Journal, Cleveland Medical Journal, Canadian Journal of Medicine and Surgery, Albany Medical Annals, Saint Paul Medical Journal, &c.

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Arris and Gale Lecture

ON

THE INFLUENCE OF THE ARBOREAL HABIT IN THE EVOLUTION OF THE REPRODUCTIVE SYSTEM.

Delivered at the Royal College of Surgeons of England on March 22nd, 1915,

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Mr. President, Ladies, and Gentlemen,—The influence of environment upon the structure and organisation of animals is a matter upon which nowadays everybody is well informed. Like so many of the ideas popularised from the work of Darwin, this factor of evolution has tended to become condensed into words and phrases which often hinder, rather than help, the progress of new thought and further research upon the subject. In 1846 when, as newly appointed professor, John Goodsir delivered his first opening address, he chose for his subject "The Progress of Anatomy." "There is nothing," he told his audience on that occasion, "which has more retarded science and philosophy, and the kindred subjects on which human reason has been employed, than the introduction of terms with conventional meanings. Men come at last to defend the terms, as if they were the truth, and to mistake an artificial shadow for the substance required." Goodsir's warning was doubtless needed in 1846; but its need was very much the greater during the upheaval of the next few decades; and to-day no better text could be taken by any man embarking upon a career of teaching others.

The Arboreal Habit and Evolution.

That habits and surroundings produce their effects in alteration of animal structure is perfectly obvious. The sum total of the outward appearance of an animal tells very truly, as a rule, what sort of life the animal leads and amidst what surroundings it leads it. But it is when we go beyond the mere outward appearance of the animal and examine the more minute details of its separate systems and organs that the wonder of adaptation is forced upon us, and the futility of any catch phrase to sum up this wonderful influence becomes apparent.

If we turn to Man and examine his special peculiarities and compare them with those of his nearest neighbours, and these in turn with those of their more remote kinsfolk, we see a sequence of modifications impressed upon the plastic animal body by life habit and environment; and if we were to ask what special life habit has been at work to produce the distinct configuration of the human body, we should probably be told by most people that it was the assumption of the orthograde posture—the habit of standing and walking upright. No doubt this assumption of the upright posture has done much in putting the finishing touches upon the evolution of the human stock; but we must be careful to give it no more than its real value. Long before the fashion of walking upright had been even foreshadowed in the crouching gait of the half-finished product, a potent factor was at work producing those changes which ultimately permitted, and culminated in, the erect carriage. This factor which paved the way, and to which most of the general changes of human and primate bodily conformation are due, was undoubtedly the arboreal habit—the habit of climbing and living up trees, instead of dwelling upon the ground beneath.

We are apt to lay too much stress upon Man's descent from the branches. It was not coming down the tree that was so important in the evolution of the human stock; it was the climbing up, the first step towards the freedom of the branches, that counted in the progress of the mammalian stock from which Man has sprung. In brief manner it might be said that this line of mammalian development could be summed up in the saying that some small and humble Insectivore—probably not very unlike our modern Tree Shrew—climbed a tree, lived and evolved among its branches, and, after long ages, walked down to the earth again in the guise of the highest of the Primates.

If the influence of the arboreal habit is not always obvious when we regard only the changes in the general bodily conformation of those Mammals which are upon the line of human evolution, it is, nevertheless, very clearly indicated when we turn to the details of change in separate systems and organs. With regard to the reproductive system, with which this paper is especially concerned, it seems to me that we can never understand the evolution of this system unless we appreciate the necessity for change of habit, and for adaptation of structure, imposed by maternity among the branches.

This, then, is the scope of my lecture—the study of those modifications brought about in the reproductive system by arboreal life, and this especially among those Mammals which are upon the line of the evolution of Man. It is when we attempt to define what Mammals are here considered to be landmarks on the path along which the human stock has evolved that difficulty is encountered. This difficulty I propose to overcome in a somewhat dogmatic manner by appealing to the type of external genitalia as the criterion by which a Mammal is regarded as being upon the line of the human stock or no.

Types of Mammalian External Genitalia.

In the Arris and Gale lectures which I had the privilege of delivering last year,[1] I discussed this question and arrived at the conclusion that there were two main types of mammalian external genitalia, and these two types I labelled for the purpose of the moment, and purely for convenience, as Type A and Type B. Perhaps it is justifiable now, as a mere matter of temporary expediency, to give more convenient names to these two types; and I propose to designate Type A as Cloacaexplicata, and Type B as Cloacaimplicata. This tentative nomenclature is proposed as indicating the main features of cloacal evolution which takes place in these two types; for in Type A the cloaca is obliterated during development by eversion, while in Type B the cloaca is obliterated by the infolding of the cloacal margins. I will go no further into this question now than to say that Type A is that which is characteristic of Man, and with Man an assemblage of lower mammalian forms. It is therefore those lower animals of which the external genitalia conform to this Type A that are considered here as being upon the line along which Man has evolved.

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[1] The Lancet, April 11th and 18th, 1914.

In my previous lectures I did not attempt to give any detailed list of the individual mammalian forms which fall into this line. Any classification furnished now must of necessity be incomplete, for until the developmental phases of the external genitalia of any particular Mammal are studied some uncertainty may be entertained concerning its true position. Nevertheless, sufficient material has already been examined to enable the general outline to be perceived, and to detect the presence of Mammals having this Type (A) of external genitalia in retrograde series from Man downwards.

Tracing this type towards its parent stock we are led to that primitive and central group of Eutherian Mammals, the Insectivora. It was Huxley's opinion as a young man that a primitive member of this group represented as nearly as possible the picture of the root stock of the Eutherian Mammals, and after another 30 years of work this view, put forward in his youth, was still more strongly adhered to. A more recent pronouncement of the same idea is that of Matthew (1909), who has declared that "the Insectivora represent more nearly than any other order the central stock from which the various groups of placental Mammals have descended."

TYPES OF EXTERNAL GENITALIA IN INSECTIVORA.

One interesting fact that has emerged from the present investigation into the method of formation of the external genitalia is that within the limits of this group are comprised not only animals whose cloacal closure is carried out as in Type A and as in Type B, but several forms in which the cloaca remains permanent throughout life. Here, then, is evidence of a primitive and generalised central position of the Insectivora such as was believed in by Huxley. The Insectivora form the basal meeting point of the Cloacaexplicata and Cloacaimplicata, and at this meeting point is found the simple cloacal Eutherian Mammal from which presumably both were derived. We might, if this matter of tentative nomenclature and classification has not already gone far enough, say that the members of the great Order of Insectivora might be divided into three groups—the most primitive group having the cloaca as a permanent structure (Cloacaperta), the second with outfolded cloaca (Cloacaexplicata), and the third with infolded cloaca (Cloacaimplicata).

There are several species of inconspicuous and little-studied Shrews in which the cloaca persists in as perfect a form as that seen in the Reptile or Bird. I think that these small cloacal Eutherians have not had sufficient importance assigned to them in the study of the phylogeny of the Mammals. There appears a tendency to assume that the cloaca of these animals is not a true one, or is a mere adaptation in some cases to an aquatic habit. By no means all these cloacal forms are aquatic, and there seems to me no doubt that the cloaca of the Insectivora is in every way as true a cloaca as that of the Reptiles or of *Ornithorhynchus* or *Echidna*. So far I have examined the microscopic details of *Blarina meridensis* from Venezuela and *Crocidura bottigi* from Abyssinia, and there remains a very large number of other forms still to be examined.

Again, a large number of species of Insectivora pass from the cloacal stage to the non-cloacal during embryonic development in the manner that I have described as typical of the Cloacaimplicata, and in this way mark the road which the Rodentia and Ungulata follow in their development. Some forms, such as the common mole (*Talpa europea*), have carried this method of development to an extraordinary degree, so that the males and females come to possess an outward sexual appearance that is identical; and again in this they are the pioneers of a development that is also displayed in Rodentia (*Capromys pilorides*), and even Carnivora (*Hyæna crocuta*). But of more interest to us in the present study is the fact that some Insectivora—or animals usually classed among the Insectivora—close the cloaca during embryonic development in the manner typical of the Cloacaexplicata, typical of the Primates and of Man.

The Tree Shrews.

These interesting animals are those known as the Tree Shrews, and called by the Malays "*Tupai*," a name which they share with the squirrels, that are true Rodents. They are of more than a dozen species, all inhabiting the Indo-Malayan region, and all possessing that rough general likeness to squirrels which has led to this very simple case of convergence being foolishly magnified into an example of protective mimicry on the part of the Insectivore. The *Tupaias* are active little animals, hunting their insect food amongst jungle from sea-level to the tops of mountains 5000 feet high. Like most arboreal forms, they have so far emancipated the fore limb from the duties of mere progression as to use their hands for conveying food to their mouths, and most have the feathered tail which, like that of the squirrels, aids them in their arboreal activities.

They have been assigned to rather different zoological positions by systematic zoologists. Their affinities are so varied that now one character and now another has been taken as indicating near kinship with several different types. From the rest of the Insectivora they and the *Macroscelididæ* are distinguished by possessing a cæcum; and these two groups are now, as a rule, combined as the *Menotyphla* (Lecke, 1884). From the *Macroscelididæ* (Cape Jumping Shrews) they differ anatomically in several characters, one of the most important being that whereas the orbits of the Jumping Shrews are not completely encircled by bone, those of the Tree Shrews approach the Lemurs and higher orders in this respect and have an entire bony ring.

It is not alone in the form of its external genitalia that the *Tupaias* show conditions unlike those seen in other insectivores and approximate those found in other and higher orders. In many features of the skull and the brain they are very much advanced from the moles and shrews and their allies; and in these features as well as in some of their dental characters they show definite affinities not only with the Lemurs, but also with Galeopithecus and the Bats.

But there is one point of the greatest interest in the conformation of the external genitalia of the male *Tupaia*; the testes, unlike those of the Insectivora as a class, are permanently descended into a scrotum, but this scrotum is situated unusually far forward, so that the testes lie to the sides of the penis rather than behind it—a condition that can only be described as intermediate between that seen in the Marsupials and that typical of the Eutherian Mammals.

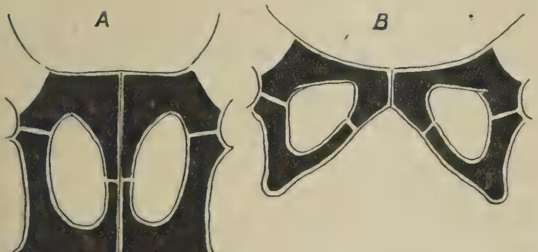
THE DEVELOPMENT OF THE PELVIS.

One fact has become more and more striking to me as I have attempted to follow mammalian affinities by the criterion of the external genitalia, and it is that the animals which follow the type of the Cloacaexplicata are essentially tree-climbing creatures. In attempting to unravel this story we are led by easy stages through the Lemurs to *Tupaia*, a typically arboreal animal; but we also find ranged in this series other animals which, though thorough tree climbers, seem to be linked by no easy stages with the stock we are considering.

Although in the finding of Primate linkages in steady sequence back into the Insectivora one may feel tolerably certain that one is dealing with true phylogenetic affinities, some doubts and some questions must arise when such aberrant animals as certain of the Edentates fall into the same group. But even should I suggest that, judged by their external genitalia alone, the Sloths were allied to the Primate stock, I should be going no further than others have gone by using altogether different criteria. Still, in the face of the possibility of this being a case of convergence due to the common arboreal nature of the two sets of animals, a great many questions must be asked and answered before we make any suggestion as to the zoological affinities of certain Edentates and Primates from the study of their genitalia. Is it possible that the arboreal habit can in itself create, or alter, a special type of external genitalia such as I have described under the name of Cloacaexplicata? I believe that the answer to this question may be attempted, not by the study of the external genitalia in themselves, but rather from a review of those general pelvic conditions which are found in association with the different types of external genitalia.

The bony framework of the pelvic cavity varies enormously in its general architecture among the different mammalian orders, and in some ways this variation appears to be haphazard and to bear but little relation to accepted zoological affinities. We may assume that the most primitive of the Mammals possessed a pelvic girdle akin to that seen in Sphenodon and in the imbricate reptiles; indeed, such a pelvic girdle persists very perfectly in the existing Monotremes. In such a pelvis two elements, the pubis and the ischium, meet ventrally, forming an ischio-pubic symphysis. (See Fig. 1, A.) This form of pelvis, in which there is an ischiatic as well as a pubic symphysis, is found with various modifications in Ungulates, in Rodents, in most Marsupials, in most Carnivores, and in some of the Insectivora. The ventral wall of the bony pelvis is long in all these animals, and this factor in itself produces some important characteristics of the reproductive system. The female genital tract between the pelvic uterus and the post-ischiatic vulva must be long, and the copulatory organ of the male must be of proportionate length. These changes will be referred to again, but we might instance here the long female vaginal and urogenital sinus segment, and the elongated copulatory organ in the male associated with the elongated symphysial area of the typical Ungulate.

FIG. 1.



Primitive mammalian type of pelvis (A) contrasted with human type (B).

If we turn at once to the human pelvis the outstanding fact is that the ischia have ceased to meet in the middle line, and with their splaying aside only a comparatively small portion of the pubis itself enters into the formation of the symphysis. (See Fig. 1, B.) Here the ventral wall of the pelvis has, as it were, been split open from its caudal end, and the ischia and also a part of the pubis have been thrust aside. With this shortening of the ventral wall of the pelvis the female genital tract has become very considerably shortened; the urogenital sinus is entirely lacking, and the copulatory organ of the male is reduced in harmony.

Influence of the Arboreal Habit on the Pelvis.

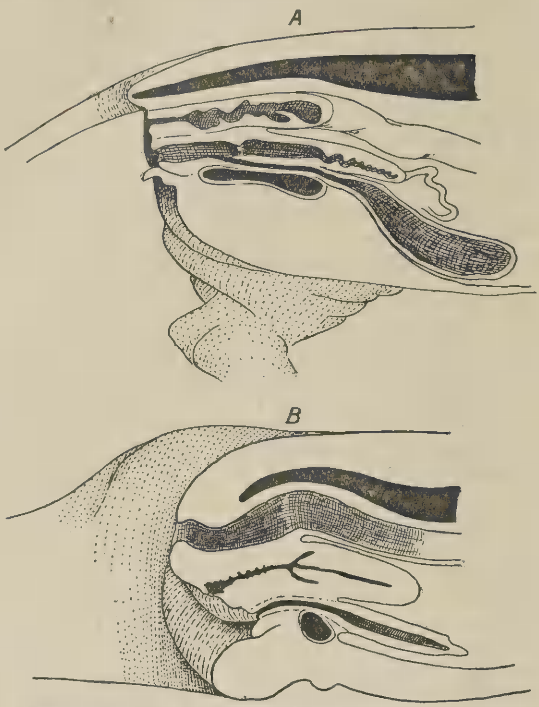
All sorts of intermediate stages exist between the partial pubic symphysis of Man and the complete ischio-pubic symphysis of the Ungulates and Rodents. We have been accustomed to regard the pelvis of Man as the typical orthograde pelvis—the outcome of the erect posture; but I would rather look upon it as the perfected tree-climbing pelvis—the pelvis that has been evolved by the arboreal habit. If in respect to symphysial development we try to match the human pelvis with any example taken from the lower Mammals we shall find it paralleled and even surpassed in the Sloths.

Within the limits of the Primate series the evolution of the human type of pelvis is particularly well seen, a pure pubic symphysis (in which the pubis only enters and to a varying degree) is present in all arboreal types, but in such pronograde forms as *Cynocephalus* and all the dog-like baboons there is a very complete return to the ischio-pubic type of symphysis. A striking contrast in the study of adaptations as opposed to status in zoological classifications is seen in the "open" pelvis of the arboreal *Lemur varia* and the "closed" pelvis of the pronograde *Cynocephalus anubis*. Among the Rodents, the Squirrels exhibit a more open type of pelvis than do their more terrestrial relations, and the semi-arboreal Felines have made a distinct start in the same direction.

Although there are some striking exceptions in the general application of any theory, I believe that it is, on the whole, the altered poise of the body upon the hind limbs that occasions this variation in the development of the symphysis. This alteration of poise is, for the most part, the outcome of the habit of climbing as opposed to mere pronograde four-footed progression upon the level surface of the earth. As a general rule we may say that where the hind limbs bear the weight of the body in the pronograde position there tends to be a complete ischio-pubic symphysis; where the hind limbs bear the weight of the body in the modified position of tree-climbing there tends to be a reduction of the symphysis, culminating in an abbreviated pubic symphysis; and where the hind limbs take no share whatever in supporting the weight of the animal the symphysis tends to be wanting altogether.

We may therefore say that it is, at any rate, a possibility that the arboreal habit has influenced the extent of development of the ventral junction of the bones of the pelvic girdle; that it has tended to bring about a shortening of the area of contact and to limit this area to a portion of the pubis only. In this way a shortening of the female genital tract has been effected, and hand in hand with this abbreviation a corresponding reduction of the male copulatory organ has taken place. (See Fig. 2, A and B).

FIG. 2



Median sections of the pelvis of (A) a full-term female pig embryo and (B) a full-term female human embryo. Note the apparent outfolding of the female genital tract in (B) where the symphysial area is reduced.

The Pelvis and the Type of External Genitalia.

But I suspect that the splaying out of the ventral portion of the pelvis has done more than this, and that it has, in some measure, influenced the type of external genitalia just as it has modified the type of the lower segment of the internal genitalia of the female by reducing and finally suppressing the long chamber which is common both to the urinary and the reproductive systems.

The fate of the Mammalian cloaca is bound up with the modifications of that portion of the body upon which it is primarily situated, and in the early embryo the cloacal site involves that area in which the ventral union of the pelvic elements ultimately takes place. It is therefore not unlikely that the evolution of the cloaca will in some measure be modified by the extent of this ventral union. There is certainly very definite evidence to show that with the opening out of the symphysis the cloaca tends to be outfolded (type of Cloacaexplicata) in the wide space left between the diverging ischiopubic rami, while with the complete closing up of the symphysis the cloaca tends to be infolded (type of Cloacaimplicata) behind the united ischiatic rami.

In this way it is possible that the arboreal Sloths merely show a convergence towards a Primate condition, and that type Cloacaexplicata may (in such cases) be the result of symphysial modifications produced by the arboreal habit. We shall see later that in several other features of their reproductive systems the Sloths approach the Primate condition, but in these other features also we may see the influence of the common arboreal habit as a rival to the claims of real zoological affinity.

TRANSITIONS FROM TERRESTRIAL TO ARBOREAL LIFE.

Apart altogether from these modifications which may be induced by mere bodily poise, and the discussion of which must be left for the present in a rather problematical stage, there are others impressed upon the reproductive system by the stern realities of the arboreal life. In order to follow these modifications we may picture a primitive Eutherian Mammal, situated right at the base of the Cloacaexplicata, and trace the influence of the arboreal habit upon its general reproductive activities. Such a hypothetical animal is perhaps most nearly represented by those fossil remains of Shrews which occur in the Oligocene of North America and Europe, or going still further back to the Insectivora primitiva of Osborn, which, including the Stylacodontidæ, are as old as the Jurassic.

Like modern Shrews this animal, while hunting for its insect prey upon the ground, would nevertheless show an extraordinary activity, and a highly developed power of climbing, such, for instance, as is often manifested by *Sorex minutus*. We must now imagine it becoming the pioneer of the route which *Tupaia* has followed and adopting the habit of ascending trees in search of its insect food. Such transitions from terrestrial to arboreal searches for insects are seen, of course, very beautifully in other orders, such as Reptilia and Amphibia.

It is now necessary to see what was the probable condition of the reproductive system, and what would be the probable effect of an arboreal life upon such a creature.

Factors Influencing the Number of Offspring.

In the first place we may assume that, like most terrestrial Insectivora with which we are acquainted, this animal would produce large numbers of offspring at a birth. Among the terrestrial Insectivora the maximum of mammalian fertility is displayed; very large litters are produced by many species, and *Centetes* is known to produce 20 young at a birth. This is, however, an unusually large family for a Mammal, and taking our common English Shrew (*Sorex araneus*) as a guide we might suppose its litters to average seven or eight with a common advance to ten or even more young. We would picture it as having a large series of nipples, thoracic, abdominal, and inguinal, to supply the wants of this large family; and we would expect the female to possess a uterus consisting in the main of two long "uterine horns" in which these multiple embryos could be accommodated.

How will arboreal life affect such an animal with such a family? It is no mere speculation to say that large families become inconveniences among the branches; and that the disadvantage of large families will be felt in two ways. There is first the disability imposed by pregnancy, and secondly the difficulty of accommodating and nursing a large family up a tree. It is not only in arboreal life that these difficulties are encountered, and in many different types of Mammals and in many different situations they have been solved. The solution has always ultimately been the same—the reduction of the family.

That the climbing activities of the female, when pregnant of a large litter, would be hampered seriously seems obvious; and yet the reality of the disability becomes still more striking when we study those curious pelvic changes which are well known to occur during pregnancy in many large-littered animals. In some Rodents stretching, and partial solution of the continuity, of the pelvic ligaments go on to such a degree that the pelvis becomes more or less unstable as a pivot for the hind limbs, and ordinary terrestrial progression becomes reduced to a mere waddle. Such a condition of the female is obviously unsuited to activities among the branches.

Large families can therefore only be indulged in, as a rule, by animals the females of which may be exempted from any very exacting activity during pregnancy. Such is a general axiom among the Mammals, and leaving altogether the stock with which we are most concerned, examples of its truth are readily furnished in many Orders. Herbert Spencer gave much thought to the well-known instance of the relative fertility of the hare and the rabbit. Much of his speculation was no doubt true; but we must not overlook the fact that a doe rabbit's home is safe in a burrow, while the female hare has no such protection. And the same cause that has led to the reduction of the hare's litter has been at work, with even greater force, among the Ungulates. Again, in aquatic life the same disability is felt, and the picture of the pelagic life of the whales makes the second axion—that where there is no nursery there will be no large families—more real.

This factor would no doubt be felt severely by the pioneers of arboreal life, for it is easy to imagine the difficulty of dealing with large numbers of helpless offspring which are unable to follow their mother about the branches. The difficulty is one which the animals with a leaning towards arboreal life have attempted to overcome in more ways than one. Of course, the female may descend from the trees at this time and produce and rear her young upon the ground; but this leads at best to a life that is only semi-arboreal, and there are many animals (such as several Felidæ, for example) which lead such a life.

Nest Building.

The next step is the attempt to provide some nursery for the progeny in the adopted home of the parent; *this is the dawn of nest building*. Most of the terrestrial Insectivora construct rather more than a mere lining for the retreat in which the young are born, and many are distinguished as nest builders. Those shrews whose domestic habits have been at all studied are known to rear their young in very well constructed nests. Such ability in nest building may be carried further even by terrestrial forms. Our common English Shrew (*Sorex araneus*), although as a rule resting on the ground, is capable of an advance in the direction we have been imagining, and it has been known to construct a very good nest 3 feet up in the branches of a young spruce fir.

What *Sorex* can do on occasion it would seem *Tupaia* does under ordinary circumstances. The nests of some of these animals have been studied, and although with regard to *Tupaia minor* Charles Hose did not feel certain if the *Tupaia* had made its own nest or used one already built by a bird, there would seem every reason to believe that with most species the nest is the work of the animal itself. Our hypothetical Insectivore, therefore, probably found nest making easily within its powers, and so made the conquest of the branches more certain.

Turning again to other stocks we see how readily nest building is adopted by arboreal or semi-arboreal Mammals. Our harvest mice (*Mus minutus*) are adepts, and dormice (*Muscardinus*) and squirrels (*Sciurus*) and many other Rodents construct extremely good arboreal nurseries. Again, among the Marsupials certain species of *Phascologale* adopt the habit of arboreal nest building, and these animals suggest some speculations that will be dealt with in their proper place.

Reduction of Number of Offspring at a Birth.

Nest making was an early solution of the arboreal nursery problem among the forerunners of the Primate stock. *Tupaia* retains the habit, and more remarkable still that aberrant Lemur, *Chiromys*, resorts also to the same practice; according to Mr. L. Baron "it builds a nest about two feet in diameter of twigs and dried leaves in the dense foliage of the upper branches of trees. The nest is entered by a hole in the side."

Nevertheless nesting is obviously a habit that must be left behind in the progress of evolution; although convenient for small animals with large litters, it becomes exceedingly inconvenient for larger species, and nest building we may look upon as merely a temporary expedient in the development of the Primate stock—an expedient adopted only so long as the production of large litters was prevalent. The typical Lemurs have, so far as I can learn, abandoned the habit; and it is to be noted that in the special case of *Chiromys* the nest that is built is probably not merely a simple nursery, for it provides a shelter for the adult in the same manner as the branch platforms constructed by some of the higher apes. In *Chiromys* the ultimate factor—the reduction of the family—has already come into play and only a solitary offspring is produced at each birth; nevertheless, the retention of the nest nursery has probably led in this instance to the development of one anatomical peculiarity which will be discussed later.

The end of all the adaptations of reproductive habit to arboreal life is the reduction of the number of offspring produced at a birth. All those truly arboreal Mammals which mark the line of human descent display this relative infertility. Among the Lemurs, although two young are occasionally produced at a birth, it is the rule that only one offspring is born. With all the *Cebidæ*, *Cercopithecidæ*, and *Simiidæ*—the whole class of the Monkeys and Apes—a solitary baby is alone produced at each pregnancy, as a rule, but upon occasion two are born.

There is a very widespread belief among the natives of Java that when a monkey has a family of more than one it is the custom for the mother to let them cling to a branch, and to rear only that one which remains clinging after the branch has been well shaken. I know not what reliance is to be placed upon the accuracy of this story, but it has been vouched for by a very observant Englishman, and it is not unlikely that the tradition represents, at any rate, a summary of the working of one factor causing the reduction of arboreal families.

Further back in the mammalian story among the Endentata such truly arboreal animals as the Sloths (*Bradypodidæ*) produce but one young at a birth, and the arboreal Pangolins (*Manidæ*) not more than two.

The Emancipation of the Fore Limb.

There is another, and a most important, change produced by arboreal life, and although this new factor has primarily no relation whatever to reproductive habit, and ultimately leads to the most far-reaching developments altogether outside this function, nevertheless it exerts its influence upon the reproductive system in some remarkable ways. This new factor may be named "the emancipation of the fore limb"; and it makes itself evident in varying degree in all arboreal types. The fore limb becomes freed from the sole use as an instrument of mere progression in arboreal life. The important story of the emancipation of the fore limb, and all that it leads to, cannot be told here; but a brief summary of the steps, in as far as they concern the reproductive habit, is necessary.

In arboreal progression the hand grasps the branches, instead of the hoof or the paw being planted upon the ground; and from this beginning it becomes a member capable of grasping other things; of being used for a multiplicity of purposes from catching insects or picking leaves to conveying the food, so obtained, to the mouth. Among other results of this modification is the ability of the mother to grasp the young and the young to grasp the mother. *This is the dawn of nursing.*

Among the Lemurs it is the rule for the young to grasp the ventral fur of the mother, and in many species the mother displays but little ability to hold or carry its offspring in its arms; indeed, according to Charles Hose, *Tarsius spectrum* has made so little progress in this direction that at times it carries its young in its mouth after the fashion prevalent among cats.

The young of *Nycticebus tardigradus* is so small, and clings so closely among the dense fur of its mother's ventral surface, that it is extremely difficult to find and dislodge. Even native dealers will occasionally sell two animals as one, so difficult is it to detect the tightly clinging young. In this species, and, I believe, in other Lemurs, the young one sometimes has its head towards its mother's head and sometimes towards her tail. In the animals that I have had in captivity the common position was for the infant to grasp the mother's chest with its legs, and cling to the abdomen with its hands, its head being pressed against the mother's inguinal region. With *Lemur catta*, apparently, the tail of the young assists it to hold on to its mother, a method that has been carried to great perfection in truly prehensile-tailed animals of other stocks such as *Didelphys lanigera* among the Marsupials.

Care of their Young by Monkeys.

Among all the Anthropoidea not only can the baby cling to its mother, but the emancipation of the fore limb has proceeded so far that the mother can hold and nurse the young. In most monkeys the young clings to the mother with its face against the mother's chest, its hands gripping the fur of her sides and the feet grasping her loins, and so travels back downwards in ordinary progression. This is the method in all the Old World monkeys that I have seen either in a state of nature or in captivity, and it is that usually described as typical; but Bates, speaking of *Uacaria calva*, says: "The mother, as in other species of the monkey order, carries her young upon her back." If this indicates that there is a real difference in the nursing habit of Old and New World monkeys, or simply means that Bates was observing rather older infants, I have not sufficient evidence to decide.

When the mother is at rest, however, there is no doubt as to the method of holding the young; and everyone must have noticed what Owen describes as "a very human fashion" of nursing typical of all monkeys. The very perfection of its likeness to human nursing renders any description superfluous but nevertheless the influences of this factor must be noted, for in some ways they are so very far-reaching in the advance towards higher conditions.

We have noted before that in situations other than the tree tops it has been necessary to limit the family for the reason that no natural nursery is to hand; but it is the peculiarity of the tree-top baby that it has a real infancy, and of the tree-top mother that in her is developed to the full the whole sum of attributes comprised in the expression "maternal care."

Among large numbers of the Ungulates (for example, the Horse) the offspring knows no nursery and is usually solitary; but it is born very mature and has but little childhood; for it must be prepared to flee at its mother's side upon the approach of danger. The arboreal baby, on the other hand, is born immature—its period of infancy is prolonged, and throughout its long stage of helplessness it must be carried and cared for by its mother. A very exact parallel is seen among birds, for the ground-nesting species (such as *Rallus Philippensis*, of which the young is running for its life in the undergrowth less than an hour after it has chipped its shell) contrast sharply with the helpless young hatched in the tree tops.

This paper is an anatomical one, and it is not intended to trespass into the psychical advances initiated by these changes; and it is unnecessary to point out the influences in psychical evolution exerted by such factors as maternal care, infantile dependence, and the formation of the family. In brief it may be said, from the eugenic point of view, that arboreal babies tend to be few but well looked after; and, from the psychical point of view, that the prolongation of infancy paves the way for social life and all the mental advances consequent upon it.

MAMMARY GLANDS.

With the anatomical changes, however, it is necessary to deal more fully. It has already been pointed out that the non-arboreal Insectivora have a large number of mammary glands and nipples; indeed, it is among these animals that perhaps the most complete mammary series is seen. *Centetes* possesses as many as 11 pairs of functional mammary glands and teats, and *Solenodon* has the distinction of retaining the most caudal glands seen in any animal, for the posterior nipples are carried on the root of the tail behind the buttocks.

Now, as a general rule, there is a very natural agreement between the number of pairs of functional mammary glands and the number of offspring produced at a birth. With the reduction of the family the reduction of the mammary series goes hand in hand.

In *Tupaia* with its many offspring reared in the nest the mammary series is still large, and pectoral, abdominal, and inguinal nipples are all present. In all other members of the Primate stock, however, the reduction of the family has led to reduction of the nipples and mammary glands. This reduction takes place in no haphazard way; only so many pairs are retained as are required for the nursing of a normal litter, and the pair or pairs in the series which are ultimately selected for persistence are those which are most convenient in the nursing habit of the mother.

It is the fashion of suckling—a fashion ruled by convenience—that determines which members of the whole linear sequence are retained as functional sources of nourishment for the young. All other members of the series undergo an atrophy, either complete or in part; nipples may persist, but milk-secreting glands disappear when function does not demand their existence. As a general rule it may be said that reduction of the mammary series first takes place in the intermediate—lower thoracic and abdominal—regions, the functioning glands persisting at the extremities of the series. The election of the distal members of the series as permanent mammary structures is demonstrated widely in the most diverse types of Mammals in which mammary reduction takes place in response to the lessened demands of a smaller family.

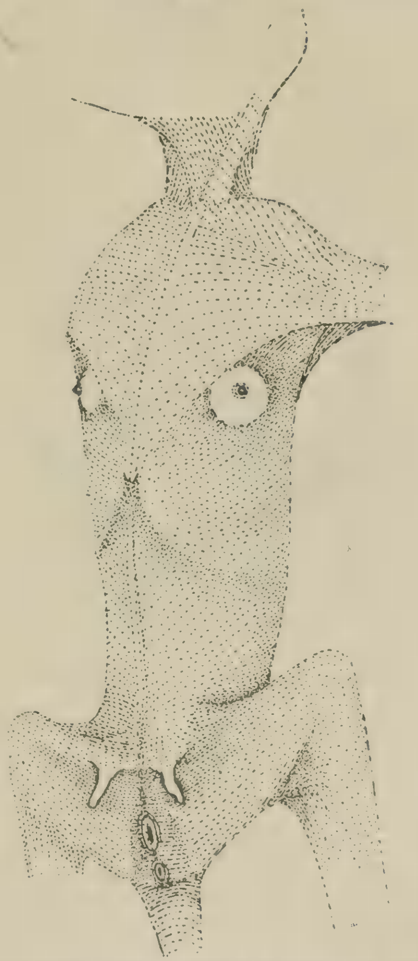
The functional element of convenience is perhaps best seen by turning at first to members of other stocks than that with which we are mainly concerned. In the mare, as an example of the true Ungulates, the mammary glands and nipples are just in advance of the vulva—a fact which arrested (and to good purpose) the attention of John Hunter. As a mare suckles the foal she can look all round for danger, she can keep her eye on the foal, she is able to graze unimpeded by her suckling offspring, and she can at once break into a trot if alarmed. With the elephant, on the other hand, it is the most cephalic pair of the mammary series that is retained. An elephant cannot flex its spine as a mare can; she could not look behind her at a calf suckling from inguinal nipples, nor could she control it with her trunk as nursing elephants are accustomed to do. The elephant calf therefore suckles from axillary nipples, where its mother can take care of it while she grazes with her trunk unimpeded by the presence of the suckling. The difference in position of the permanent mammary glands in the mare and elephant is therefore probably the outcome of convenience, ruled by the bodily conformation and life habits of the parent animal.

Anchoring Nipples.

Among the lower members of the Primate stock a mammary condition of the greatest interest is present. We have seen that among the Lemurs the young clings to the ventral fur of the mother with its back downwards and its head either directed towards the mother's head or towards her tail. This habit has led in most of the Lemurs to the retention of two pairs of distal nipples—a pectoral pair and an inguinal pair. The subsequent history of these nipples is correlated with the nursing habits of the different species. In some Lemurs the pectoral pair becomes predominant, while the inguinal pair degenerates, and in at least one species the reverse development is seen.

In captive specimens of *Nycticebus tardigradus* I have studied the functional meaning of these nipples. When the mother is moving about, climbing, eating, or searching for food, the young one, as a rule, has its head pressed against her inguinal region, and mother and offspring are opposed head to tail. In this attitude the young buries its face in the inguinal fur and grasps an inguinal nipple in its mouth. The position assumed by the young under these circumstances is doubtless to permit a greater freedom of movement to the mother when leading an active life among the branches. I do not know if the young *Nycticebus* obtains any nourishment from these inguinal teats, but I am inclined to believe that it does not, for obvious suckling takes place when the mother is at rest, and the baby, reversing its position, seizes a pectoral nipple. Doubtless in some forms these inguinal nipples are associated with functioning mammary glands and are a source of nourishment for the young, but I know no observations on this point. It is certain, however, that the general fate of these structures is that they become mere skin appendages unassociated with mammary glandular tissue, and thus cease to function as organs for the conveyance of milk to the offspring. (See Fig. 3.)

FIG. 3.



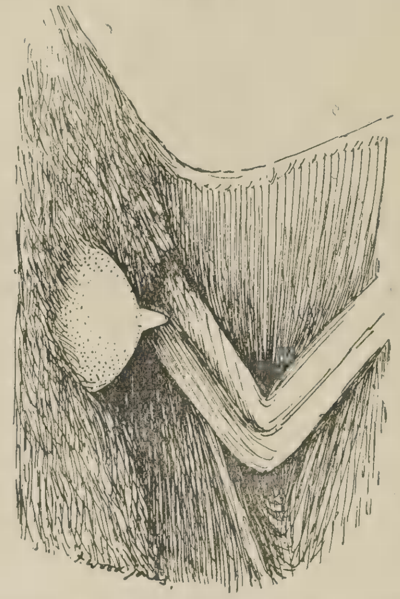
Reduction of the mammary series as it is seen in most Lemurs and some Bats. The pectoral mammary glands are functional milk-secreting structures, but the inguinal pair are reduced to the condition of "anchoring nipples."

Such nipples I shall call "anchoring nipples," for they serve merely to provide a firm basis to which the young may tether itself by its mouth. "Anchoring nipples" do not by any means degenerate, but become firm and elongated structures, which, though mere skin appendages, are reminiscent in their form of the Marsupial teat, which is an anchoring as well as a milk-supplying organ.

It is, perhaps, best to note here that anchoring nipples are not confined to the Lemurs. Among certain families of the Bats they are well developed, for the young of these animals clings to the mother's ventral surface and attaches itself to an inguinal anchoring nipple while the mother is in flight, but suckles from a pectoral nipple when the mother is at rest. This condition is exemplified in most of the common species of rhinolophid Bats, but the details have been especially noted in the literature in the case of *Rhinolophus ferrum-equinum* by Rollinat and Trouessart, who have named these nipples as the "faux tétons du pubis."

The position of the Cheiroptera with regard to the Primate stock, which we are now considering, will be noted later; but it is of interest to observe here the identity of mammary development in the Lemurs and in certain members of this Order. It will be recalled that it was the possession of a pair of pectoral mammary glands by the Bats that decided Cuvier in placing them among the members of his Primate order. (See Fig. 4.)

FIG. 4.



The remarkably human type of pectoral mammary gland of a Bat (*Brachyphyllum cavernosum*).

There is, however, at least one Lemur—the aberrant Chiromys—in which the inguinal nipples are apparently not reduced to the condition of anchoring nipples, but remain associated with the functioning mammary gland and are the source of infantile nourishment. According to Owen Chiromys possesses "but one pair of nipples situated about an inch and a half in advance of the vulva." I should imagine that the retention of inguinal nipples and mammary glands in this animal was probably the result of its nursing its solitary offspring while lying on its arboreal platform. The nest-building habits of this curious Lemur have been mentioned previously, and this habit, taken in conjunction with the fact that Chiromys produces but one offspring at a birth, possibly accounts for the retention of a pair of inguinal mammary glands as a matter of pure convenience in nursing the offspring in a nest. Chiromys must, however, be considered as an exception in this particular to the general trend of evolution in the Primate stock, for the the tendency is for the inguinal anchoring nipples to wane while the pectoral mammary nipples increase in size and importance.

Functional Explanation of Mammary Development.

This process takes place step by step with the increasing ability of the mother to grasp the baby. When the mother can hold and carry the baby the inguinal anchoring nipples are no longer of use and they undergo an atrophy; the infant being nursed in the arms and held to the more convenient pectoral nipples, the glands associated with these nipples become enlarged, and ultimately, in the higher members of the Primate stock, become the sole representatives of the long linear series of the lower Mammals. It is, however, worthy of note that even in the human female inguinal nipples may reappear. Such a case is that of a woman described by Testut and quoted by Blanchard and Rogers Williams in which inguinal nipples associated with mammary glands existed.

It may be urged that although such a functional explanation is a plausible one for accounting for the mammary development of the Primates, yet it might in reality be some more obscure but inherent peculiarity of this stock to develop mammæ in the pectoral region; that the perfection of the human breast was surely more than the mere outcome of the convenience of some lowly Primate compelled to suckle its offspring amidst the branches of a tree.

Any doubts are, I think, dispelled by turning to other arboreal animals which are not usually admitted to be near relations of the Primate stock. Assuming, as we are entitled to do by all classifications accepted by modern zoologists, that the Edentata have no very intimate affinities with the Primates, then it must be an example of the development of similar anatomical adaptations to meet similar functional necessities that results in the typical mammary condition of the Sloths and their allies.

In these Edentates all the phases which we have followed in the Primate stock are displayed to perfection; the animals have become arboreal; the family has become reduced; and while some species possess both inguinal and pectoral mammæ, in others (the most purely arboreal forms) the inguinal nipples are lost and only a strikingly Primate pair of pectoral mammæ persists.

Another animal whose mammary condition needs mention here, though its zoological position will need discussion in another place, is the anomalous creature (*Galeopithecus*) sometimes known as the "Flying Lemur." The solitary offspring of *Galeopithecus* clings to its mother as do the young of Lemurs and Bats, and in this type again a pair of large pendulous mammary glands is situated upon the sides of the chest.

Possible Tendency to Unilateral Mammary Development.

We have followed the steps by which a reduction of the family leads to a reduction of the mammary series, and we have noted the process by which nursing in the arms led to the selection of the pectoral pair as the permanent human mammary glands. It is easy to understand that since the primitive mammary lines are bilaterally symmetrical structures, symmetrical mammæ will persist even when the production of only one offspring at a birth is the established rule. But it is also natural to ask if long continuance of this state of things may not tend to a unilateral mammary development; if the long-established habit of suckling only one offspring may not tend to the development of only one functioning breast.

From what we know of the laws of symmetry in the animal body it does not at first sight seem likely that any such tendency should be manifested. None of the Lemurs, Monkeys, or Anthropoid Apes show, so far as I know, any tendency to asymmetrical development of the mammæ; but the fact has been known to artists, physicians, and anatomists from the very earliest times that in the human female the left breast tends to be somewhat larger than the right. This fact is noticed time and again throughout the literature. Here we have a possible human tendency in mammary development; and again this tendency is the outcome of pure convenience in nursing.

Man has distinguished himself from all the other Primates in the almost universal preference for the specialised use of his right hand. The Primates lower than Man know no distinction in the use of right or left; Man alone shows a preference to perform specialised movements with one hand rather than the other. It is a matter of indifference to a monkey if the infant be carried on the left arm or on the right, and it is accordingly suckled indifferently at either breast. The majority of women, however, prefer to nurse the baby upon the left arm with its head towards the left breast, the right arm being free to perform other duties. This preference for suckling the infant at the left breast is manifested in women apart from any question of race or racial habit, and must be regarded as an outcome of the human tendency to asymmetrical specialisation in the use of the fore limbs.

One other factor has come into operation here, and this is the increasing separation of the mammary glands in the human as contrasted with the monkey type. This separation is brought about mainly by the widening of the chest, which is itself doubtless an outcome of the more upright posture of Man. In some Monkeys the breasts are so near together that the young of *Cercopithecus lalandii* has been seen to suckle from both nipples at once. This is, of course, impossible with the human type of chest and mammary gland; it must be one breast or the other, and selection is favouring the left breast.

THE INTERNAL GENITALIA.

As for the internal genitalia there can be no doubt that the arboreal habit has brought about the greatest changes. We have already seen that with regard to the lower segment of the female genital tract it is possible that the tree-climbing habit has left its mark very clearly indeed. We have noted that the length of this portion of the tract varies with the extent of the ventral pelvic symphysis, and that with the splaying out of the symphysis the tract becomes reduced in length. In this way the urogenital sinus has become progressively shortened until in the human female it is altogether absent; the long common chamber which exists with an ischio-pubic symphysis being opened out, as it were, by the splaying aside of the ischiatic rami. Hand in hand with this we have noted a progressive reduction of the male copulatory organ, and the development of this organ according to a very special type.

With regard to the upper portion of the internal genital tract of the female I am convinced that the reduction of the family consequent upon the arboreal habit has produced the very greatest changes. These changes are worthy of consideration, for to my mind we need some readjustment in our ideas concerning the progress of the evolution that has resulted in the production of the essentially human type of uterus.

It is possible for the student of pure human embryology to press his views too far; and in the explanation of many human anomalies I think it is probable that too much weight has been attached to mere mechanical interpretations of phases described as occurring in such human embryos as have been recorded in a series of different stages. To be properly interpreted ontogeny must be checked at every turn by phylogeny, and the mere structural study of sections and models should be controlled throughout by some appreciation of the physiological need of the developing animal for the special type of development of individual organs and systems.

It is, to my mind, essential in the study of the development of the human internal genitalia to keep constantly in view the fact that the chief modification has been imposed by the arboreal habit, and is an adaptation for procuring a system which shall accommodate only a single offspring during its pre-natal stages. The evolution of the uterus from the so-called "low mammalian" to the so-called "high mammalian" stage is merely a process by which a system designed for the reception of a large number of embryos is given up, and a system is evolved which is adapted solely for the needs of a single embryo. The differences between the processes as I shall describe them and those usually described may not seem great in detail, but the difference in functional conception of the evolution is considerable.

The Development of the Uterus.

I need not remind you that we generally assume that, from a condition of completely separated Müllerian ducts, evolution proceeds by stages of a partial fusion over a greater part of their extent; that whereas a lower Mammal has a large unfused portion—represented by the uterine cornua—these cornua have been fused and coalesced completely in the corpus uteri of Man. Such a theory is apparently supported by a whole series of anomalies which are well known to occur in the development of the human uterus. This conception might be summed up by saying that in Man the whole of the Müllerian ducts are fused into a common chamber, with the exception of that portion which forms the Falloppian tubes; and that the human uterus represents the coalesced uterine cornua of the lower animals. Such a conception has an initial inherent improbability, since the aim of evolution in producing the human type of uterus has not been to make a large median chamber out of two previously large bilateral chambers, but rather has been to perfect a single small chamber destined to accommodate a single offspring. The generally accepted explanation of the evolution of the Müllerian ducts is, to my mind, an example of embryology run riot for want of the proper controlling study of phylogeny.

Far from the development having taken place by the retention and fusion of the largest segments of the Müllerian ducts, it has taken place by an absolute reduction of a portion of the duct; for that portion of them which forms the uterine cornua of lower animals has, I believe, disappeared in man. The portion of the duct which forms the uterine cornua is destined to be the bilateral nidus of numerous offspring in the lower animals; this portion shrinks with the reduction of the family; it disappears when it is the established rule for the family to be reduced to a single offspring.

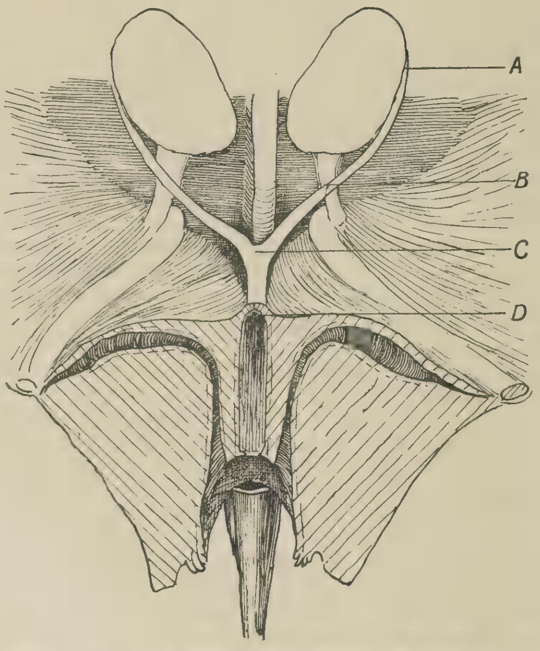
Quite apart from any study of embryology its reduction is strikingly displayed in the mammalian series. It is only necessary to contrast the uterine cornua of the large-littered pig with those of the mare to see that far from a median fusion of the cornua taking place to form a corpus uteri, it is the uterine cornua that are themselves dwindling in response to the diminished demands for the accommodation of multiple embryos.

Phases of Uterine Development in the Embryo.

Turning to the actual phases in the developing embryo, I think the process is made abundantly clear; and I imagine that the human uterus represents the caudal, median, fused portion of the Müllerian ducts such as is present in most lower Mammals, but that the uterine cornua are wanting in man. It is not that they are fused into the common chamber of the median uterus of man, but that they have disappeared in the process of development.

In the early stages of the Müllerian ducts all embryologists recognise three well-marked portions; the first, which lies in the long axis of the body and stretches from the cephalic end of the tube, at the ostium abdominale, to the gubernacular strand; the second, which is transverse to the long axis of the body and stretches medially from the gubernacular strand to the mid-line where it enters the genital cord; and the third, which is again in the long axis of the body and lies in the genital cord. (See Fig. 5.)

FIG. 5.



The female genital ducts of a fœtal mare. A–B, Falloppian tube segment. B, Gubernacular strand. B–C, Cornuate segment. C–D, Uterine or genital cord segment.

The fate of these three parts is easily followed. The first part forms the Falloppian tube; the second the uterine cornu; and the third (in which alone fusion ever takes place) the corpus uteri. The first two portions are suspended in their own bilateral mesenteries, and these portions do not fuse in any animal; the third portions are incorporated in a common mesentery, which is part of the genital cord, and these portions fuse in most (but not all) Mammals. The gubernaculum in the female persists as the round, or uterine, ligament of the ovary, and as the round ligament of the uterus. The first portion is therefore all that part of the Müllerian duct which is cephalic to the crossing of this strand; the wide-bored and thick-walled Falloppian tube of Man, or the narrow, thin-walled, and tortuous Falloppian tube of the lower animals.

It is sometimes assumed, even to-day, that the human Falloppian tubes are the representatives of the cornua of lower animals, and that the abnormal human tubal pregnancy is in some way a reversion to the condition of normal pregnancy in the uterine horns. Many of the older anatomists considered that the human Falloppian tubes were the homologues of the cornua of lower animals; Gerardus Blasius (d. 1684) makes use of this homology throughout his works on comparative anatomy. But it was recognised early that there were essential differences between the two structures, for Harvey says: "In a woman, as we have said, the two Trumpets near the process of the neck of the womb, which are perforated into the cavity thereof, are not commonly reputed proportionable to the Horns, but are conceited by some anatomists to be Vasa spermatica; by others Spiramenta uteri; by a third sort Vasa semen deferentia aut reservantia." But Harvey himself would have none of these ideas, and he lays it down as his opinion of the Falloppian tubes that "in truth they are answerable to the Horns of the womb of other animals."

The second portion stretches from the round ligament to the sides of the corpus uteri—this is the uterine cornua of the lower animals, but in man it is either altogether absent, or, if present at all, is represented by the so-called "interstitial portion" of the tubes. The third portion forms an inconspicuous median uterine chamber in most lower Mammals and constitutes the uterus of man.

The second, or intermediate, portion of the tubes —i.e., that part running primitively in the transverse axis of the body—is at first quite long in the human embryo. In the 19·4 mm. embryo the condition is similar to that seen in the lower animals which possess long uterine cornua; from the point of crossing of the gubernacular strand a considerable length of the human embryonic duct is taken up in the passage towards the middle line. In older embryos this portion appears relatively less and less developed. Its growth seems to cease altogether, while the portions upon either side of this stationary interval enlarge considerably. In this way that point on the tube to which the gubernacular strand adheres in its crossing alters its position relatively to the extremities of the tube; and we have only to look at the different courses taken by the gubernacular strand in the two main types of uterus, and in the intermediate forms which link them, to gain some idea of the relative degree to which the different portions of the tube develop in these types. With elongation of the second—or cornuate—portion of the Müllerian ducts the round-ligament attachment becomes moved in an upward and outward direction as the tube between it and the genital cord increases in length. (See Fig. 6.) On the other hand, with shrinking of this cornuate portion the point of attachment becomes dragged nearer and nearer to the genital cord, so that a sharp angle is developed between the portion running from the ovary to the tube, and the portion running from the tube towards the inguinal region. (See Fig. 7.) With further shrinking of the cornuate portion this angle becomes more marked until, with the final atrophy of the cornua, the gubernacular attachment is dragged in to the sides of the genital-cord portion, and blends with the musculature of the wall of the median uterine chamber. Such a condition is seen in the human uterus.

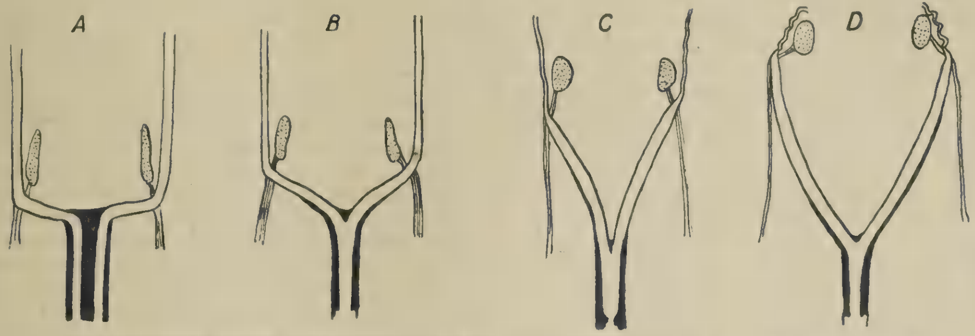
Stages of Uterine Evolution.

These stages of uterine development are all seen in members of the stock with which we are most concerned. Among the Insectivora Cloacaperta the uterine cornua constitute two entirely distinct chambers, there being no fusion even in the genital-cord portion, but in other members of the order the long cornua are united in the genital cord to form a small uterine body. The condition seen in the Tupaiadae (*Tupaia ferruginea*) is of interest. The Falloppian-tube segment is short, and although not markedly tortuous is of very narrow bore; the uterine cornua are long and capacious, but the corpus uteri is well marked and is conspicuously delimited by a well-marked os uteri leading into a vagina and urogenital sinus.

Among the lower Lemurs some extraordinary reversions to a low type of the Insectivora are displayed; but these reversions for the most part involve only the lower portion of the genital tract, and the uterus shows a steady advance (or rather adaptation to a single offspring) upon the stage seen in Tupaia. Indeed, no better summing-up of the general characters of the lemurine uterus could be given than that furnished by John Hunter in his description of the Lemur, which he terms the "Mongoose or Mocock." "The uterus," he says, "is between that of a monkey and of a common quadruped; or is what may be called the first stage towards the quadruped's or double-horned uterus." Such a condition may be illustrated by an examination of the internal genitalia of *Tarsius spectrum*. In this animal the Falloppian-tube segment is of narrow bore and slightly tortuous; the uterine cornua are comparatively short and thick, while the uterine body is well developed and is distinctly marked off from the vagina by an os uteri.

The next stage of development of the lemurine uterus may again be recorded in the words of Hunter, for in speaking of a lemur's uterus in which reduction of the horns has gone still further, he likens its outline to that of "the heart as it is painted upon cards." In the monkeys the reduction is still more complete, and it is impossible to refrain from quoting again, this time from Owen, who, describing the uterus of Baboons and Macacques, says that the angles of the fundus are slightly produced "like a last indication of cornua." This is indeed the last indication of cornua in the Primate stock, for the anthropoid condition is similar to that of Man.

FIG. 6.



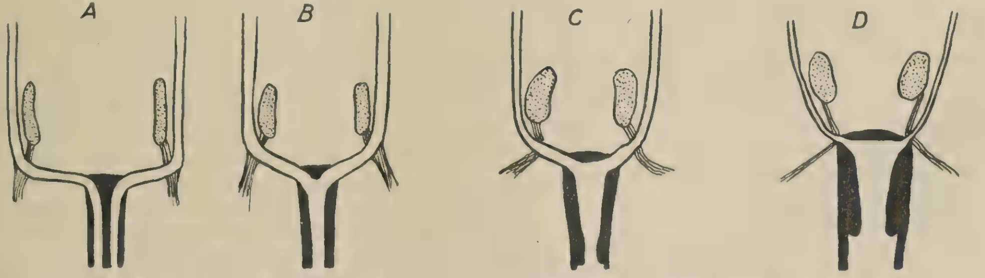
Four diagrammatic stages in the development of the "cornuate" or multiple pregnancy type of uterus.

Uterine Evolution in Bats and Edentata.

In examining the mammary evolution, we saw that collateral evidence could be derived from a study of the Bats (which I am considering as an offshoot of this line) and certain of the Edentates. The same interest is attached to the uterine conditions found within the limits of these two same orders.

In the various families of Bats this uterine evolution is extremely well displayed. Among the Megachiroptera (fruit-eating bats) the uterine cornua may be entirely separate, no fusion having taken place in the genital-cord segment, and separate "uteri" are present. This condition is seen in *Cynonycteris* (*Xantharpyia*), *Hypsignathous*, and *Epomophorus*; but in some other genera there is a fusion in the genital-cord segment and a small corpus uteri is present. In the Microchiroptera (for the most part insect-eating bats) the most primitive condition of the Megachiroptera is again found in *Taphozous melanopogon*, which has entirely separated cornua. In *Rhynchonycteris*, *Saccopterix*, and *Enballonura* the cornua are still large, but the genital-cord portion is represented by

FIG. 7.



Four diagrammatic stages in the development of the simple or single pregnancy type of uterus.

a small corpus uteri. In *Nyctinornus*, *Nycterides*, and *Vespertilio* the uterine cornua are diminishing and the corpus uteri is more conspicuous. And the process culminates in *Phyllostomatidæ*, in which the uterus is of a simple human type possessing no uterine cornua.

Among the Edentata the uterine evolution is still more interesting, for associated with certain features in the internal genitalia which we must certainly consider as zoologically "low" are uterine features which are distinctly advanced, or, as we should say here, associated with the arboreal habit of producing a single offspring. Undoubted reversions to a primitive Insectivorous type are seen in the lower portions of the genital tract, but associated with this "low" condition is a uterus that can only be described as human in type. In certain Edentata the uterine cornua have disappeared, not by fusion in a high type of animal, but because the cornua are not needed to accommodate numerous offspring.

Anomalous Development of the Uterus.

It will possibly be objected that even if this picture of the development of the uterus be supported by phylogeny, and is an apparently justifiable interpretation of the stages recorded in ontogeny, nevertheless the well-known human anomalies support the orthodox explanation so thoroughly that it is essential that any other attempted interpretation must explain them equally well. To my mind the picture I have attempted to draw of the evolution of the Müllerian ducts furnishes a better explanation of the human anomalies than does the generally accepted theory.

The human bicornuate uterus I regard, not as a malformation in which the Müllerian ducts have failed to fuse, but as an arrested stage—a reversion, if the term be preferred—by which the internal genitalia fail to achieve their full development in the atrophy of the normally temporary cornuate portion. A rudimentary, or undeveloped, uterus will be arrested in some earlier phase, a stage represented, not necessarily by non-fusion, but by ill development of the uterine body and persistence of the cornua. That portion within the genital cord which undergoes a fusion, phylogenetic and ontogenetic, may exhibit varying stages of incompleteness of fusion, and so varying types of septate uterus or double uterus may result. Failures of fusion occur in the third, genital cord, or uterine segment; failures of retrogression occur in the second or cornuate portion; and both conditions are the outcome of arrests of normal development.

CONSIDERATION OF OTHER POINTS.

One or two points left unconcluded need some explanation. I have alluded to the Marsupial genus Phascologale in connexion with nest-building. The Marsupial stock is so far removed from the animals with which I am especially dealing that any detailed discussion of them would be out of place here. I need not point out, however, that I am putting forth no new or original thought in mentioning that the marsupial pouch itself is possibly an early and only partially successful solution of the problem of dealing with a family in a stock which is said to be primitively arboreal.

Again I have made more than one reference to the Chiroptera and to Galeopithecus. These forms I regard as offshoots from the stock which we have had under review. Offshoots which in pre-Eocene times had made a thorough conquest of the branches, but which had been over enterprising, and had, in learning to glide and to fly, lost that very emancipation of the fore limb which had carried them so far and permitted them to make their fatal experiment.

I am aware that this study does not warrant wide-reaching conclusions, and yet it has its significance in the study of human origins. Since in this system we see that arboreal life has brought about so much that we regard as "human" (and in other systems it is even more striking), should we find anything very incongruous in the blending of a very large number of typically "human" characters in a form which is still a very primitively arboreal "animal"?

THE ORIGIN OF HUMAN ATTRIBUTES.

Leave for a moment the train of thought that we have been following. Turn back in your minds to the works of the pre-Darwinian period. Bulky volumes will occur to you, volumes crammed with eulogistic descriptions of Man and all his attributes. Whole shelves of our libraries are devoted to such works, and there is no end to the written plaudits of the perfection of human characteristics.

The nobility of poise, the charm of proportion, and the general distinct, and unanimal, aloofness of the human body are described with unstinting appreciation. The special attributes of the human mind are paraded, and the realities of family love, the social life, and the glorious culmination in unselfishness and lofty thought are emphasised to point the intellectual separation of Man from the rest of the animal world. The whole sequence of this trend of thought and all that it implied will readily occur to you.

Over a wide interval of upheaval, chaos, and extremeness we will pass to the period of a scientific yesterday. The work of the morphologists is accomplished. Man is a perfected, but in many ways a primitive, animal. He has outclassed his Mammalian competitors, and become distinct from them in many bodily and mental changes. The distinctive poise of Man remains in the newer conception of these changes, even if the praise of human bodily grace and proportions is left to a past generation; and the assumption of the upright posture is the key to the solution of the problem of the origin of human attributes. Man the upright animal is the dominant note of modern human morphology.

It is a step backward from Man the upright to Man the tree-climbing, but it is a step which we must take in attempting to learn the origin of human specialisation. It was among the branches that necessity determined and opportunity perfected the special adaptations of human bodily and mental characters.

I have confined myself to a very limited study of a single system; but every system and every part of man's body tell plainly the same story. Even within the limits of the system whose evolution we have been following, I think it is possible to see that some of the peculiarly human psychology, which has been the subject of so much admiration from moralists and philosophers; some of the perfections of the human female figure lauded by artists and poets; and some of the characters of internal structures exploited by the morphologist, were impressed upon the animal body by the schooling of arboreal life.

[Towards the cost of some of the material used in this investigation assistance has been afforded by the Dixon grant of the University of London.]

PULSUS ALTERNANS IN SOME OF ITS CLINICAL ASPECTS.[1]

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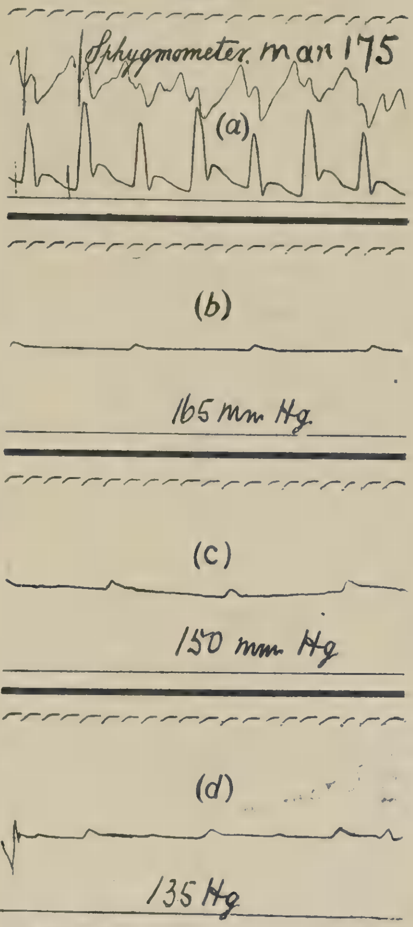
THIS communication deals with pulsus alternans in three different relations. The first of these is the bearing of pulsus alternans upon so-called blood-pressure records; the second is concerned with the clinical detection of an alternating pulse; and the third has reference to the influence of this form of pulse on prognosis.

Pulsus Alternans and the Sphygmometer.

When the sphygmometer is applied to a person in whom the arterial pulse has a normal and regular rhythm it is assumed that all the pulse waves are of equal force, and that the sphygmometer pressure necessary to suppress a selected series of radial beats is the exact measure, neither more nor less, of each individual beat. The measurement thus obtained is commonly quoted as the blood pressure or sometimes as the maximum blood pressure. As this external or sphygmometer pressure neutralises all the pulse waves during the selected period of observation, and as all the waves are assumed to be of equal force, the sphygmometer figure is accepted as an index of the force of each or any individual wave. Obviously this position must be modified in the case of pulsus alternans, for here the individual pulse waves are not of equal but of unequal force. Therefore a sphygmometer pressure necessary to suppress completely a series of such waves, that is, a pressure sufficient to neutralise the more forcible, must be excessive in respect to the less forcible. Hence if the sphygmometer measurement as ordinarily obtained is a record of the blood pressure, such a record in pulsus alternans must be incorrect in reference to 50 per cent. of the pulse beats. The figure which is true for the stronger waves is an exaggeration in relation to the weaker, just as the pressure needed to neutralise the less forcible waves would be deficient as a measure of the more forcible. In other words, the blood-pressure measurement as displayed by the sphygmometer must, in the case of pulsus alternans, be either a double one or an inaccurate one. If there is presented one figure representing the pressure associated with the more energetic pulse beat, and another figure for the pressure of the less energetic, the position may be harmonised with the values which the sphygmometer professes; but short of this there is no safety—to suppress all the beats is to err in the direction of excess; to suppress only the weaker ones is to err in the direction of defect.

The situation just defined is exactly illustrated in Fig. 1. The first tracing (*a*) is the ordinary sphygmographic picture of pulsus alternans, and the sphygmometer pressure necessary to suppress all the radial beats is attained when the mercurial column reaches a height of 175 mm. In the language of the hour, therefore, the patient has a blood pressure represented by the figure 175. If now the sphygmometer pressure is lowered to 165, some of the pulse waves come through (*b*), while others are suppressed; and it is obvious that the former are the alternate strong beats and that the missing waves are the alternate weaker ones. This experience is repeated when the sphygmometer pressure is further reduced to 150 (*c*), and it is not until the pressure has fallen to 135 that the alternate weaker beats are seen in the sphygmogram (*d*). If then the usual sphygmometer method were applied to this case the blood pressure would be recorded as 175, a figure which is manifestly inaccurate, as judged by the sphygmometer's own showing, in relation to one-half of any period to which the record may be held to apply. The only alternative would be to register the blood pressure as 175 at one moment and as, say, 140 at the next succeeding moment, and to intimate that this alternation is indefinitely repeated. Now it can hardly be proposed that such alternation of blood pressure can be due to a rhythmical alternate contraction and dilation of the peripheral arterioles. Hence the difference in sphygmometer measurement between the alternate strong and weak beats must be due solely to a difference in the degree of cardiac force. But if this is true of differing pulse beats and differing sphygmometer measurements in one and the same individual, it must surely be true also of differing pulse beats and differing sphygmometer measurements in different individuals. The measurements vary, or may vary, as expressing different degrees of cardiac force—a display which, however interesting, is certainly not a complete picture of the blood pressure. In general terms, therefore, while the maximum sphygmometer reading as usually taken may afford an approximate intimation of the degree of force with which the

FIG. 1.



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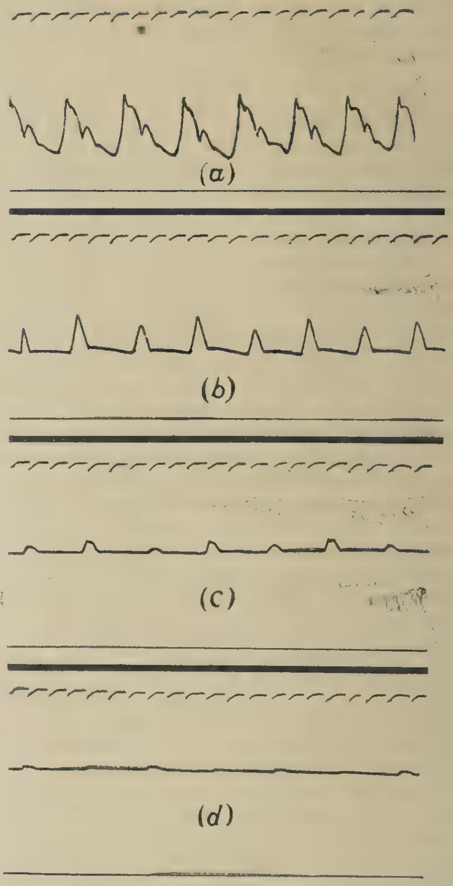
[1] The substance of this paper was communicated to the Association of Physicians of Great Britain and Ireland at the Cambridge Meeting.

systole of the left ventricle arrives at the brachial artery, it is far indeed from offering a comprehensive presentation of the state of the blood pressure. This is not to challenge the clinical value of the sphygmometer, at least within certain limits, but it is to advance a basis for the claim that records obtained by this apparatus ought to be expressed, not in terms of blood pressure but rather in terms of sphygmometric measurement. There are other considerations which support this claim. Thus, while the sphygmometer reading is a fact, its interpretation as blood pressure is an inference, and descriptive scientific terms ought to announce facts and ought not to enclose speculations or opinions; again, whatever contribution may be made to the sphygmometer record by the pressure of the blood, something—admittedly a very uncertain something—is contributed by the resistance of the arterial wall and perhaps also by the resistance of other tissues, so that, as a matter of fact, the reading is not purely a record of blood pressure; and further, stated at its highest, the claim of the sphygmometer, at least in its maximum record, is limited to the ability to present a single aspect of blood pressure—namely, the height to which such pressure rises during a period of time of uncertain, undefined, and therefore of possibly varying duration. These considerations certainly suggest the need for some care in the phrasing of sphygmometer records, and the argument now advanced is that a study of pulsus alternans in relation to such records adds strength to the suggestion that they should be recited in terms of sphygmometric measurement and not in terms of blood pressure.

The Detection of Pulsus Alternans.

The second proposition which I wish to advance is a more practical one. It is that a pulsus alternans which may escape the finger, and the stethoscope, and perhaps also the pulse tracing may be rendered evident and even conspicuous by the combined use of the sphygmometer and the sphygmograph. This is illustrated in Fig. 2. The radial pulse of the patient from whom these tracings were taken was certainly not suspected by the finger to have the characters of pulsus alternans, and, as seen in the first of the tracings (*a*), no such suspicion is justified by the sphygmogram. Yet if, while a radial tracing is being taken, more or less pressure is exercised on the brachial artery, the distinctive features of pulsus alternans come out very conspicuously. The difference between the height of the alternate waves is most decided when the sphygmometer pressure is at a moderate level (*b*), it is somewhat less decided as the pressure is increased (*c*), but it can still be appreciated even when the pressure is carried near to the obliterating point (*d*). The same truth is illustrated in Fig. 3, where the upper tracing was taken under ordinary conditions and each of the two lower ones while the brachial artery was subjected to a greater or less degree of pressure by means of the sphygmometer armlet. In this instance, however, it must be admitted that the original sphygmogram does offer to careful examination some hints of the presence of pulsus alternans. First, there will be noticed a slight difference in the height of the alternate waves; and, secondly, each of the less prominent waves is also less sustained, as is shown by the relatively less conspicuous "shoulder" or tidal wave. To judge from this tracing, therefore, the existence of pulsus alternans means an alternation not only in the force but also in the duration of the alternate cardiac systoles, and such an observation is the more interesting in view of the statement that no such variation can be discovered by the electrocardiograph.[2] The point here of importance, however, is that a condition of pulsus alternans which might well have escaped detection by the ordinary methods was readily made evident when a radial tracing was taken under the influence of pressure applied to the brachial artery through the armlet of the sphygmometer.[3]

FIG. 2.



When the observations just described had once attracted attention it seemed necessary to test, almost as a matter of routine, the effect produced on the radial pulse tracing by pressure applied to the brachial artery. Without such test it appears impossible to be sure that any pulse, however regular and normal to the ordinary methods, may not perchance be, and as it were in a concealed fashion, an example of pulsus alternans. When this is done it is surprising to find how frequently a pulse which seems to be composed of equal waves, the products presumably of equally forcible cardiac systoles, offers suggestions that the waves are not really equal, and that the cardiac systoles which produce them are therefore not equal. In Fig. 4 is seen a sphygmogram of which the constituent waves, all of them, have apparently an equal force and an equal duration. After the tracing had been taken the paper was removed and was again passed through the sphygmograph, while, at the same time, the sphygmometer armlet was tightened around the upper arm to a degree sufficient to suppress the radial pulse. In this way the upper line of the tracing was drawn, and it shows that, though most of the pulsations are suppressed, every now and then a wave effects its escape past the sphygmometer armlet and is registered as a radial movement. Similarly in Fig. 5 the ordinary sphygmogram presents a series of waves of which every one appears to be identical with its fellows, yet when pressure is applied to the brachial artery the beats come through not in equal but in unequal excursion (*b*), and even when the pressure is urged to what appears to be the obliterating point there is still an occasional radial movement (*c*). In a word, these observations appear to show that even when the pulse waves as exhibited in a sphygmogram may seem to be of equal force and value, some of them, when tested, may, at least in individual instances, overcome a pressure to which others are obliged to yield; that, in short, the appearance of sphygmographic wave equality is not a final and conclusive proof of essential wave equality.

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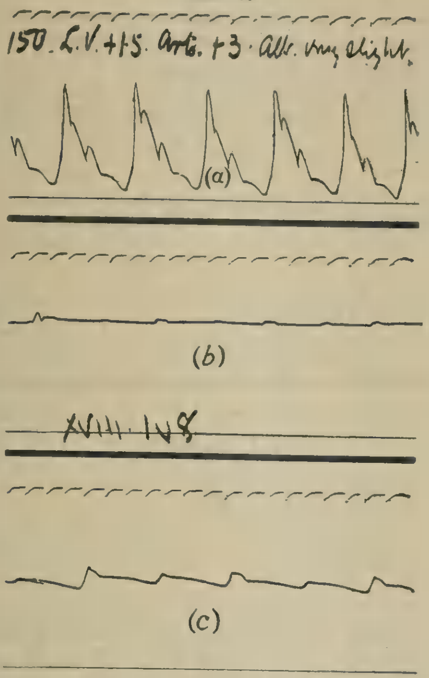
[2] Diseases of the Heart, Dr. James Mackenzie, third edition, p. 258.

[3] Since writing this paper I have learned that an observation similar to that recorded above has been made by Dr. Louis Gallavardin, of Lyons, who, in an article entitled "Pouls Alternant et Cœur Alternant," published in *Le Journal Médicale Français*, Feb. 15th, 1913, writes: "La seconde conclusion est que l'on aura intérêt à *aider le doigt explorant la radiale, de la compression de l'humérale* au moyen d'une manchette brachiale pneumatique ou plus simplement d'un des doigts de l'autre main. On arrivera ainsi à mettre en évidence des alternances que la palpation radiale simple aurait sûrement laissé échapper. ...... Il y a ...... une alternance *latente*, insensible au doigt, invisible même sur les tracés sphygmographiques, et que la méthode sphygmomanométrique et l'exploration bidigitale parviennent seules à mettre en lumière."

FIG. 3.



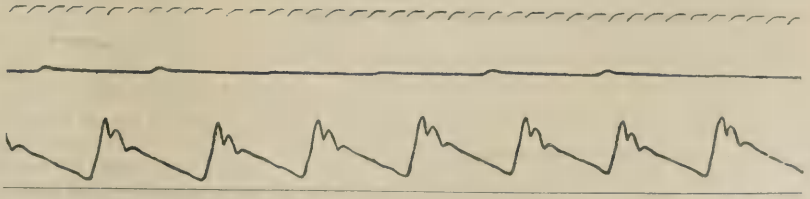
Is it, then, necessary to admit that pulse waves which appear to be equal may be the products not of equal but of unequal cardiac systoles? *A priori* this question would certainly be answered in the negative. Yet some explanation of the above facts must be found, and it is by no means certain that the *a priori* conclusion is the correct one. It is beyond question that the "escaping beats," as they may be called, of Figs. 4 and 5 are not due to a gradual fall of pressure in the sphygmometer, for were this the case they would, when once established, continue to appear, and presumably in an increasing measure; whereas, as the tracings show, the arrival of one or more of the "beats" may be followed by a more or less prolonged period of complete suppression. Nor would the suggestion of a falling sphygmometer pressure explain the irregularly unequal waves of Fig. 5 *b*.

Another explanation of the tracings (Figs. 4 and 5) now under discussion might be that the radial pulse movement varies in consequence of varying degrees of pressure exerted on the brachial artery as a result of involuntary muscular contractions in the upper arm. To exclude this proposal with complete confidence is not easy, and it is perhaps equally difficult to affirm it. Were it true there ought to be with each "escaping" beat a fall in the sphygmometer index—assuming the instrument to be sufficiently delicate for such a record—and personally I have not been able to detect any such happening.

At first sight it seems an extravagant suggestion to say that the "escaping" beats in Fig. 4, or the more marked waves of Fig. 5 *b*, are due to exceptionally vigorous cardiac systoles, for such a suggestion, in view of the corresponding and apparently normal sphygmograms, would involve the proposition that cardiac systoles which, measured by all the usual clinical methods, appear to be of equal force and value are really of unequal force and value. Yet when we find that this conclusion is necessitated in certain cases of pulsus alternans (Fig. 2), may it not be true also in instances in which the differences between cardiac systoles of apparently equal merit occur irregularly rather than in an alternating series? If inequality has to be admitted in the systoles responsible for the apparently equal waves of Fig. 2 *a*, how can we deny the possibility of inequality in the systoles of which the apparently equal waves of Fig. 4 are the product? All that is needed to bring the two tracings on to the same platform is to suggest that in one case (Fig. 2) the variation in the force of the systoles occurs with alternate contractions, while in the other case (Fig. 4) the variation is irregular and without apparent plan.

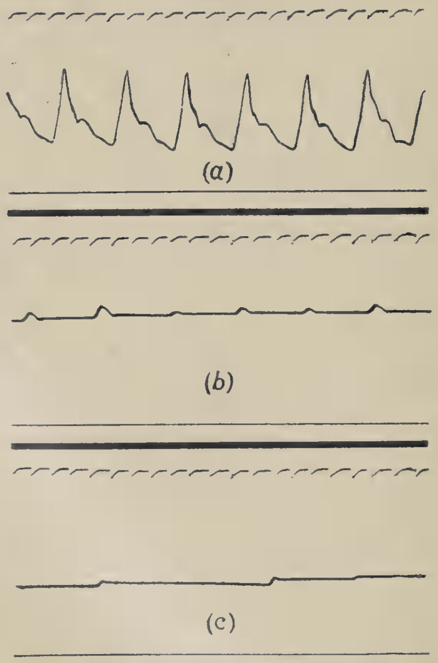
The conclusion just stated will appear less extravagant if it is recognised that the differences displayed in the apparently equal waves of certain sphygmograms when pressure is applied to the brachial artery may be differences which, in ordinary circumstances, are potential only, and that to expose them it is necessary to erect the special conditions which such brachial pressure implies. It is generally allowed that pulsus alternans, in the case of a heart predisposed to adopt this particular rhythm, may be excited or revealed by any circumstance which increases the degree of cardiac strain, and possibly obstruction of the brachial artery by the armlet of the sphygmometer may be such a circumstance. From this it

FIG. 4.



is no great advance to the suggestion that the same condition may perchance be sufficient to evoke a display of non-alternating variation in the force of the cardiac systoles when a tendency to such variation exists. In this way the two orders of events exhibited in the tracings which accompany this paper would be harmonised in principle, the only difference being that in the one group (Figs. 2 and 3) the armlet pressure reveals a tendency to an alternating variation in the force of the ventricular systoles, and in the other (Figs. 4 and 5) a tendency to an irregular (non-alternating) variation. Yet in each instance it remains true that these tendencies to an abnormal rhythm would not have been discovered unless, in addition to the usual methods of examination, the pulse had been tested while pressure was applied to the brachial artery. And this involves the admission that the apparently equal waves of a sphygmogram may arise from cardiac systoles which, if not unequal in the existing conditions, may at least be unequal in their capacity to deal with the circulatory position created by obstruction, partial or complete, of a medium-sized peripheral artery. Though the sphygmographic waves appear to be the products of ventricular systoles of identical value, a pulse-tracing taken while the brachial artery is subjected to pressure may show that such systoles are essentially unequal, at least in the sense that they vary in their ability to meet a new situation with one and the same measure of success.

FIG. 5.


(a)

(b)

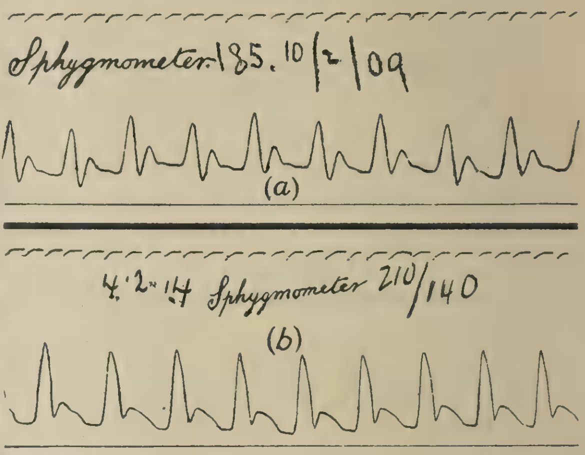
(c)

Apart from the discussion, doubtless somewhat speculative, of the significance of such tracings as Figs. 4 and 5, the tracings have this practical interest, that they show how easy it may be for different observers in one and the same case to record different levels of sphygmometer measurement according as the observation is made at a point where one or more "escaping beats" pass the sphygmometer armlet, or, on the other hand, during a period when all the waves seem to be suppressed. Whether the tactile or the auditory method of estimate be employed, the presence of these "escaping" beats is certainly not very uncommon, judging at least from observations made on patients of whom probably the majority were the victims of cardio-vascular degeneration. In cases of this order such tracings as Figs. 4 and 5 may be noted at least every now and again.

Pulsus Alternans and Prognosis.

There is a general agreement among writers on the subject that pulsus alternans almost invariably carries a very alarming prognosis. When exceptions to so serious a rule occur it is of some importance that they be recorded. As it happens, I am able to quote a case in which the patient is still alive, and believes herself to be quite well, although so long as five years ago (Fig. 6 *a*), and on many occasions in the interval, her pulse has shown characteristic alternation. At the date of the first observation (1909) she was 22 years of age, and was found to present distinctive clinical evidences of chronic interstitial nephritis, including albuminuria, cardiac hypertrophy, a high sphygmometer reading, and extensive retinal changes. Yet she has continued to discharge her household duties as the wife of a poor man and the mother of three children, and she professes to-day to be quite well and free from all complaints other than occasional headaches. No doubt this sense of well-being is in some measure misleading, as the physical changes above described (other than the retinitis) still persist; on some occasions, too, the pulse tracing shows the features of pulsus alternans, whilst on others the tracing has the characters exhibited in Fig. 6 *b*. Allowing freely that the woman is not "cured" as she believes herself to be, there remains the fact that she is alive and active even though six years ago pulsus alternans in a quite decided form was part and parcel of her clinical state, and that it existed in association with the cardio-vascular changes which mark the progress of chronic interstitial nephritis. In view of the terms in which the prognostic significance of pulsus alternans is usually phrased such an experience is certainly noteworthy. The more serious the general rule the more welcome is it to find the possibility of exceptions.

FIG. 6.


Sphygmometer 185. 10/2/09

(a)

4·2·14 Sphygmometer 210/140

(b)

Harley-street, W.

HOME OFFICE ORDER AND DEATHS IN BATHS.—The Home Office has issued an order that in the case of all deaths occurring in baths an expert pathologist shall be called in to make a thorough investigation of the circumstances and to give evidence at any subsequent inquest.

SOME ASPECTS OF THE CILIARY BODY IN HEALTH AND DISEASE.

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OF the structures composing the uveal tract the most important is the ciliary body. Herein it may be said that the soul of the eye resides. The ciliary body may be compared to the escapement mechanism of a watch. Just as the performance of a watch depends upon the protection of the delicate mechanism of its escapement, so does the nutrition of the eye depend upon the integrity of the ciliary body. In a watch the escapement forms the most delicate part of the movement. The pivots, for example, work in jewelled holes to lessen friction and diminish wear, and any disturbance of the accurate adjustment causes the watch to go irregularly or cease to go at all. Almost the same is the case with the ciliary body. Disturbance of its nutrition generally means impairment or arrest of the nutrition of the eye. While inflammatory conditions of other structures of the eye do not directly imperil the existence of the organ, inflammation of the ciliary body in more or less degree always does so. And the reason is not far to seek. The explanation lies in the special structure of the ciliary body and in the function it discharges. Anatomically, the outstanding features of its structure are its vascularity and sensory nerve-supply. As the blood organ of the eye it consists of a dense plexus of blood-vessels supported by connective tissue and arranged in the form of processes constituted from the inward folding of the various layers of the choroid. So, also, in similar density, is the distribution to the ciliary body of the sensory nerve-supply derived from the long and short ciliary nerves. The extreme sensory endowment thus provided is probably a special feature which Nature has been careful to arrange, in order that early warning may be given of the pathological dangers to which the ciliary body is exposed. By this means, in the case of an inflammatory attack the ciliary body is at once enabled to transmit a "S. O. S." call for therapeutic assistance. Useful in this regard as a symptom is the intense agony associated with an acute attack of primary glaucoma, indicating, as it does, the urgency of immediate relief. The pain in these cases is due to the vascular engorgement of the ciliary body, and to its compression against the unyielding sclera. For the same reason a primary iritis only becomes painful when the ciliary body is involved in the inflammation; an iritis, *per se*, is not painful, but when the attack is accompanied by pain, the eyeball is then found to be tender to palpation, showing the presence of cyclitis and the severity of the inflammation.

The next point which bears upon our theme is the function discharged by the ciliary body. It has already been observed that this function is mostly concerned in maintaining the nutrition of the eye. This is accomplished by ensuring a normal intra-ocular tension. The contour of the globe depends upon the two transparent media, the aqueous and the vitreous, and the ciliary body, by providing the fluid-supply, enables these media, under normal conditions, to preserve the tension required.

Incidentally, it may be noted that an interesting controversy has arisen in respect of the special means by which the intra-ocular fluid, represented by the aqueous, is derived from the ciliary body. In the first place, there are those who hold that the fluid is formed by filtration, and, secondly those who maintain that the fluid is manifestly a secretion. This diversity of view mainly prevails among the physiologists. Then the ophthalmic surgeons appear on the scene. They have a difference of opinion with the physiologists who favour the secretion theory. Since Collins, by an ingenious inquiry with bleached sections, demonstrated what he believed to be glandular bodies in the ciliary processes, attributing to them the secretory source of the aqueous, ophthalmic surgeons have generally accepted the revelation; but the physiologists, on the other hand, have shown no sympathy with this discovery. Their accepted view is that the aqueous is secreted entirely by the uveal epithelium covering the ciliary processes—curiously enough, this was practically the view propounded by Méry, so long ago as 1707. Moreover, it has been pointed out by Leber that the tubular invaginations of Collins have not the anatomical character of glands, having no secretory duct, no proper lumen, and no glandular epithelium.[1] In some recent correspondence which I have had with Professor Bainbridge upon this subject, he writes: "The view most commonly held, and which I share, is that the aqueous is formed by filtration through the ciliary processes." And so the matter, as indicated above, stands in the present day. The advocates of each view maintain their position. Possibly the controversy in the main may be reduced to an axiomatic statement—namely, that lymph is not a secretion, and the aqueous is not lymph. If lymph only were necessary for the supply of intra-ocular fluid, how is it that the protein content of the aqueous is negligible in comparison with that of lymph?

But the question of greater importance in this connexion is not whether the aqueous is a filtration or a secretion, but that its character varies, as the blood varies from which it is derived. Owing to its extreme vascularity the ciliary body is very responsive to blood changes. We see this in the irido-cyclitis of syphilis, of tubercle, of gonorrhœal rheumatism, of alveolar pyorrhœa, to mention some instances. In all these the aqueous undergoes a marked change in character, physically shown by a varying degree of turbidity. Turbidity of the aqueous means also a corresponding turbidity of the vitreous. Normal aqueous has been shown to be sterile. Again, aqueous is claimed to become toxic in cases of septic ulceration of the cornea, the toxin from the septic focus passing through the layers of the cornea, through Descemet's membrane, and so entering the anterior chamber. The effect of the toxin is to cause the aqueous to act as an irritant upon the tissues of the uveal tract, leading to the exudation of polymorphonuclear cells, which fall to the bottom of the anterior chamber, forming hypopyon. The aqueous is also toxic in irido-cyclitis of endogenous origin, and this explains the occasional presence of hypopyon associated with these inflammatory attacks.

The toxic condition of the blood, due to perverted metabolism, affects in varying degree the nutrition of the eye. Metabolic processes as a whole depend upon the controlling influence of the thyroid gland. In this regard two morbid entities represent the extremes of thyroid disturbance—hyper- and hypo-thyroidism respectively. On the one hand, "systemic goitre," as an American writer prefers to call exophthalmic goitre, and on the other myxœdema, in which atrophy of the gland is present. Between these two extremes lie diseases of metabolic origin of lesser magnitude, the signs of which are those of hypothyroidism. The simplest form, I believe, of this toxæmic influence of metabolic perversion is met with as an ocular manifestation. It has been customary to ascribe so-called "muscæ volitantes" to a physiological source. The physiological basis of their presence is attributed "to the persistence of portions of the framework of the fœtal vitreous" (Collins). The fact, notwithstanding, remains that this entoptical disturbance of the vision only becomes troublesome to those who for some reason at the time believe themselves to be suffering in health, for only on these occasions is it that complaint of "black specks" is made. At other times there is freedom from the trouble. Hepatic disturbance is the popular conception of the cause. The history of these cases suggests that "muscæ volitantes" is a pathological, rather than a physiological, sign. They indicate that some metabolic disturbance has ensued by which the aqueous has become defective in transparency or in some degree changed from its normal character. In one case a patient alleged to me that he was always troubled with muscæ volitantes at business on the day after attending a public dinner. He attributed the sign, which ceased to be noticeable after some hours, to the food taken being imperfectly digested. In the cases where muscæ volitantes remain persistent hypothyroidism in some degree may be inferred, for which thyroid treatment is indicated. So far as the eye is concerned the sign is of no import, but regarded as a systemic manifestation its recognition may prove of value to the patient.

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[1] Norris and Oliver: System of Diseases of the Eye, vol. i., p. 198.

When we come to consider inflammatory states of the ciliary body there is in certain cases clear evidence of the evil influence of metabolic disturbance. In so-called serous irido-cyclitis, or more commonly, keratitis punctata, or, shortly, "K.P.," the signs of hypothyroidism are distinctly manifest in the patient. The etiology, nevertheless, of this disease has never been definitely determined. The disease is distinguished by a chronic passive inflammation of the uveal tract, accompanied by the deposition of "dotted opacities" upon Descemet's membrane, which assume a triangular outline, with the base downwards. These "dotted opacities" consist of "lymphocytes and plasma cells" derived from the uveal tract, exuded as the result of the toxæmic irritation of the tissues. The history in such cases is always typical. Apart from the ocular signs the patients complain of loss of appetite and flesh, of physical and mental depression, of coldness of the hands and feet, and of overwork, to the effect of which the signs are attributed. Thus these cases are met with mostly among women whose ordinary strength is unequal to the demands of their occupations. The metabolic origin of these signs, due to hypothyroidism, is proved by the rapid improvement which follows thyroid treatment. With 3 grains, twice daily, of thyroid extract even in the course of a week a noticeable change ensues. A marked feature is the early return of the appetite, and partly, no doubt, from this patients soon begin to increase in weight. In the course of a few weeks the irido-cyclitis has cleared up, the appetite has become vigorous, physical and mental alertness have become visible in movement and facial expression, and convalescence is practically established. One among many typical instances of the kind was in the case of a former West London Hospital nurse, who, while private nursing, fell under the ban of these symptoms through an excess of night duty. The value to her of thyroid treatment met with a response of appreciation which left no uncertainty in respect to the accuracy of her condition. A measure, it must be confessed, of fascination belongs to the therapeutic value of thyroid treatment. There is the rapidity of action which follows its use; there are its far-reaching effects, accomplished by means so apparently simple, as would probably have astounded the multi-drug prescribing physicians of old. In the case of many a poor overworn patient, depressed and ailing, unfitted for work, from whom the joy of life has temporarily passed, the extract of thyroid proves a veritable elixir of life. But while reaping the gratification which springs from the benefits it confers no doubt the patient wonders, with full reason, how so trivial a thing as a small tablet, neither drug nor chemical, should possess the power for good it displays. And so of the many great advances of modern medicine I believe the evolution of our knowledge of the protean effects of hypothyroidism and of its treatment by thyroid extract to be one, at least, of the greatest. What is true of the therapeutic value of thyroid extract in the treatment of keratitis punctata is equally true of that large class of cases of ulceration of the cornea among the poor, the cause of which is generally attributed to "debility." Among these are included the cases which in olden days would have been described as "strumous ophthalmia." Nowadays the term "strumous" has ceased to be officially recognised; persons, the victims of active tubercle, are now not strumous but tuberculous; persons who look "strumous" now emphasise the general signs of hypothyroidism, in more or less degree, and these signs vanish under thyroid treatment.

Attention may now be drawn to a further aspect from which metabolic toxæmia affecting the ciliary body may be considered. First, it may be said that the term "vicious circle" is applicable to cases of metabolic toxæmia. There is the primary stage, represented by auto-intoxication, arising as we may assume, in the intestines. To combat the toxæmia so-called, the thyroid gland, through its secretion, is called upon to make strenuous efforts under the influence of excessive stimulation. For a time these efforts are successful. Later on, however, the thyroid fails in its mission. Then follows the second stage—namely, hypothyroidism. With this begins a pervading uncontrolled toxæmia. Accompanying this, and dependent upon it, is the last stage—that of diminished resistance of the tissues, thus rendering them a prey to bacillary infection. The difficulty, however, of these cases lies in the absence, oftentimes, of any cause of the toxæmia and of the hypothyroidism which is present. In the case of "K. P." the signs of hypothyroidism are so well marked that the existence of some source of toxæmia is at once suspected. But while it is impossible to believe that any toxæmic condition could fail to depress the action of the thyroid, the fact remains that the hypothyroid effect is not always actively marked—for example, a case comes under observation of irido-cyclitis, the cause of which is due to alveolar pyorrhœa. Here the source of the toxæmia is evident. On the other hand, the hypothyroid effects are commonly but little noticeable, or even, it may be, are absent. In former days the toxæmic source of these cases was overlooked. They were classed under the generic name of "rheumatic," and rebellious to treatment they proved upon the basis of their rheumatic origin. The perversion of metabolism, however, which establishes an irido-cyclitis in alveolar pyorrhœa, is also responsible for the disease in other forms of auto-intoxication. Hence the term "rheumatic" now conveys no etiological significance beyond implying that the attack of irido-cyclitis is of toxæmic origin. There is held to be some association between these attacks and so-called gonorrhœal rheumatism, inasmuch as in such cases a common history is that of a previous gonorrhœal infection. But the term rheumatism suffixed to gonorrhœa is merely a term, and in these days might with advantage be improved upon. The signs of so-called gonorrhœal rheumatism may be symptomatic of rheumatism. But, on the other hand, these signs are probably due to a para-gonorrhœal toxin, as distinct from that present in a pure rheumatic attack, as is the toxin of tetanus from that of any other pathogenic organism.

The fact of the toxæmic origin of these cases being admitted, the assumption follows that a more or less degree of hypothyroidism is present which requires as the first line of systemic treatment the administration of thyroid extract. A striking instance of the efficacy of this method was in that of a man suffering from a third attack of so-called rheumatic irido-cyclitis. The signs were acute, the eye was intensely painful. Three grains of the extract were ordered twice daily. After taking the third tabloid all the pain ceased, and yet the severity of the pain was such as to indicate relief by leeching.

Metabolic toxæmia, I believe, bears closely upon another form of irido-cyclitis—namely, that associated with the acute parenchymatous keratitis of inherited syphilis. Congenital syphilis is a disease of very varying virulence. The many eccentricities which distinguish its mode of transmission find their counterpart in the varying intensity of its incidence. An infant may be grossly syphilitic at birth; then it commonly fails to survive. But while this represents the extreme effect of the hereditary transmission, on the other hand the stigmata of congenital syphilis may be so nebulously manifested as to escape notice. In these cases nothing may happen until later childhood. Then may come an attack of interstitial keratitis, which reveals the certainty of the taint. Moreover, this interstitial attack may be the only manifestation, an isolated symptom at the time, unaccompanied by any additional evidence of systemic infection. Of such cases I can recall instances which have come under my observation where deafness, disseminated choroiditis, gummata, and nodes, the common signs associated with an interstitial attack have each been absent.

The logical inference to be derived from these cases is that congenital syphilis can be at times a very benign disease, the presence of which is displayed only when some adventitious tissue environment renders its manifestations possible. The evidence of that environment is commonly shown in the children in whom acute parenchymatous keratitis develops. Frequently the general condition of the patients is more noticeable than the ocular signs of which they complain. These children are mostly wasted, pallid, feeble with malnutrition actively marked—objects of physical misery from every point of view. The stigmata of syphilis in active virulence are not here exhibited in the general condition of the patient. On the contrary, the general signs are those of metabolic toxæmia, of depressed vitality arising from hypothyroidism. As such they correspond to those to which attention has already been drawn in connexion with keratitis punctata. The view that the spirochæte becomes attenuated in virulence in the process of transmission is supported by the fact of its failure to impress upon its host the facial and other features which form the peculiar appanage of syphilitic inheritance. Whenever, therefore, these conditions prevail it may be concluded that except for the adventitious tissue environment represented by hypothyroidism, the spirochæte would be unable to exhibit the pathogenic influence which still remains to it. This assumption is borne out by clinical experience. The worst cases met with of interstitial keratitis are always those in which the signs of hypothyroidism are most pronounced. At this point some reference may be made to the widely divergent views which prevail of the nature of interstitial keratitis. By some authorities it is held that the disease is directly due to the action of the spirochæta pallida; by others that it is only, indirectly, a manifestation of syphilitic infection, and that it should be included among those of the para-syphilitic type. Elschnig believes that the disease is a degenerative one, due to disturbance of nutrition, arising from toxins circulating in the blood stream. My view, as will have been gathered from the reasons already expressed, closely accords with the latter, and it is in consequence of that view that for some years I have regarded cases of interstitial keratitis as not among those to be treated by antisyphilitic remedies. Upon this subject I may now add a few further remarks. Believing, as I do, that the pronounced objective signs of malnutrition indicate that the syphilitic manifestation is secondary to, and has only been rendered possible by, the metabolic toxæmia present, it seems entirely unscientific to treat these cases heroically by "606," and by leeching to relieve the photophobia. It may or may not be admitted that there is but little syphilis in these cases, but the fact nevertheless must be conceded that the disease is overshadowed by the evident malnutrition. Amid, therefore, the pervading diminished resistance of the tissues, the spirochæte is able to assert its presence, but in consequence of the depressed vitality the tissues are unable to respond, save feebly, to the therapeutic influence of antisyphilitic treatment. The persistent method of treating these cases, as if they were purely syphilitic, by heroic measures, has probably been accountable for the notorious repute they possess of requiring a prolonged period of treatment before convalescence is established. Thirty years ago it was commonly held that 18 months' treatment at least was requisite before cases of interstitial keratitis could be regarded as cured. This cheering information used to be imparted to the parent attending with her child for treatment. But it is true that the severity of the inflammation was much greater then than is now customary to be seen. The cornea was not infrequently wholly vascular, "salmon" colour in appearance.

The lines of treatment which I have followed for some years include beginning with 3-grain doses twice daily of thyroid extract, and locally fomentations and atropine. As the nutrition proceeds in improvement so the ocular signs diminish in severity. In a deplorably bad case of malnutrition, a case typical of the worst form of double interstitial keratitis, a child under this treatment was fat, strong, and well at the end of three months. And there the problem remains; if interstitial keratitis be purely and wholly a syphilitic lesion, how is it curable without antisyphilitic treatment? Impartial reasoning suggests that except for the tissue environment of pronounced diminished resistance the attenuated spirochæta pallida of a benign congenital transmission would fail to exert its pathogenic influence. The possibility of this view being correct throws emphasis again upon the value of recognising the vulnerability of the ciliary body—practically the blood organ of the eye—to metabolic disturbance. It emphasises, too, the therapeutic advantages to be gained by combating such toxæmic manifestations by thyroid treatment. Moreover, in this connexion the reflection inculcated in the following quotation from a paper by Hertoghe, of Antwerp, applies with force to ophthalmic surgeons—namely, "The day is coming when we will interrogate the thyroid equation (hypo or hyper) in all our patients with the same fidelity that we inquire to-day into their previous history as regards tuberculosis, syphilis, and alcoholism."[2]

In conclusion, the main purport of this paper is to lay stress upon hypothyroidism as a causative factor in cases of irido-cyclitis and upon the usefulness, clinically, of its recognition. That the ciliary body, so sensitive to toxæmic influence, should readily respond to thyroid treatment is a natural sequence to the vascularity of its structure. Thus is placed in the hands of the ophthalmic surgeon a means of relief, yielding results which can be obtained in no other way. The dose of the extract employed by me for children beyond 5 years of age and for adults is 3 grains twice daily, and from this dosage I have never seen any ill-effects.

Wimpole-street, W.

FRACTURE OF THE PELVIS, WITH EXTRAPERITONEAL RUPTURE OF THE BLADDER.

By A. E. BLACKBURN, M.D. BRUX., M.R.C.S., &c.
AND
W. WARNER COOK, M.R.C.S., L.R.C.P. LOND.,

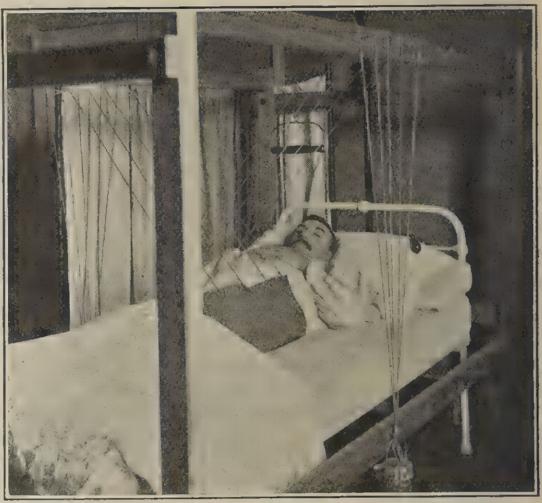
FRACTURE of the pelvis and rupture of the bladder are fairly common accidents, but the enormous separation of the pubes and the extensive damage to the bladder and prostate from such a simple cause seem to make this case unique.

The patient was a healthy farmer aged 45 years. The accident occurred on August 5th, 1914, whilst he was engaged in showing a horse for military purposes. He jumped on to the horse bareback. At the time he felt no pain, but after riding a few yards he felt a griping sensation "inside." This became so bad that he rolled off the horse; he was found in this condition and taken home. He was quite certain that he did not jump heavily on the horse, and he was equally certain that the horse did not buck, nor crush him in any way. He was not under the influence of alcohol. He had ridden horses for years, and times out of number he had mounted horses in a similar way. The accident occurred at 6 P.M.; he was seen by us at 7 P.M. He was in great pain and his scrotum and perineum were very swollen and discoloured, and his left leg was rotated outwards.

On first sight it appeared that the case might be a simple hæmatoma of the testis, considering the history of the accident, but as he had not passed urine for some time, and there was no bladder dulness, it was decided to pass a catheter. On passing a catheter a little bloody urine was withdrawn. It was considered advisable to remove the patient to a nursing home for operation, as his house was 10 miles from the town. He was operated upon at 1 A.M.

On making a suprapubic opening hæmorrhage was very free, and this was found to be coming from the region of the prostate, which was ripped up, along with the bladder. The rent in the bladder was so extensive that the hand could readily be passed into its cavity. The ramus of the left pubic bone was fractured near the symphysis, and the separation was over 6 inches in extent. As the hæmorrhage was so free and the patient was in such a critical condition any attempt at suture of the bladder was considered unadvisable, and he was merely packed with gauze and drainage-tubes inserted. His legs were tied together and the usual treatment for shock was carried out. He was not expected to recover. Hæmorrhage continued to be profuse for the next 24 hours, but the patient rallied and his condition next day was satisfactory.

FIG. 1.



The patient lying in the leather splint. The bed is surrounded by a wooden frame, cords are fastened to the leather and passed over the top rail of the frame; at the ends of the cord on either side is a tin containing shot. The tin on the left side contains 6 lb., the right 12 lb. The patient is "slung" in the same way as one slings a horse.

On August 9th the plugs were removed, and on the 11th, under an anæsthetic, a metal catheter was passed and tied in, the bladder washed out, and Irving's apparatus applied. The bladder was washed out twice daily, and urotropin and brandy were given regularly. About this time he appeared to be developing pneumonia. The temperature went up and nasal breathing was marked, but it subsided after more frequent bladder washings. On Sept. 3rd an attempt was made to draw the pubic bones close together, and a leather splint was applied with counter-extension and weights (Trendelenburg). (See Fig. 1.) The patient had complained of great pain and could not sleep, but from the day on which this splint was used he became more comfortable. On Oct. 14th he passed urine naturally, and the suprapubic opening closed about the end of November, and he was able to stand, but this gave him pain, and he was glad to return to his splint.

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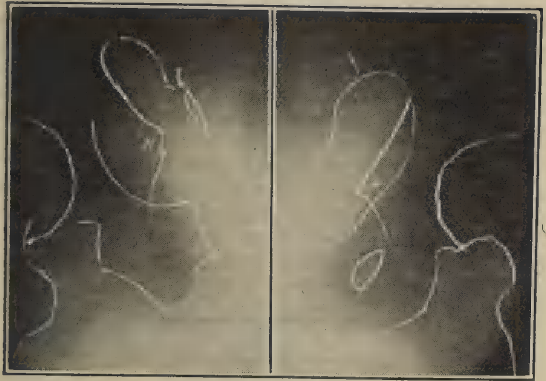
[2] American Medicine, April, 1914, p. 198.

On cystoscopic examination of the bladder in December, it was found to be perfectly healed, and no scarring was found. An X ray examination disclosed the fact that the bones were still about 1½ inches apart, and that the sacro-iliac joint has suffered partial dislocation; but in spite of this fact the patient is able to walk. The skiagram (Fig. 2) shows the present condition.

FIG. 2.



Skiagram of pelvis looking from behind. Left side: × shows partial dislocation of the left sacro-iliac articulation. The ilium is displaced upwards. Right side: × shows the normal position of the right sacro-iliac joint. The left os pubis is seen separated from the right; the fracture going through the symphysis, above which the coccyx appears. The bone is displaced upwards. The straight line shows the width of the separation of the pubic bones.

The case is interesting in the extensive injury produced by merely jumping on a horse, and the suggestion of congenital weakness of the pubic symphysis does not explain it. The use of the Trendelenburg splint for drawing the bones together we have not been able to find in any text-book, and are indebted to Mr. Thomson Walker for pointing it out in a French genito-urinary paper. In spite of the fact that no sutures were inserted into the bladder, it healed up perfectly, and the capacity does not appear materially altered. The patient is now pursuing his ordinary work as a farmer, walking easily for three miles at a stretch.

HYPERTRICHOSIS IN THE INSANE.

By C. T. EWART, M.D. ABERD.,
SENIOR ASSISTANT MEDICAL OFFICER, LONDON COUNTY ASYLUM, CLAYBURY.

ANYONE with an observant eye who happens to pass through the wards of an asylum cannot help but being struck with the number of female patients showing an excessive overgrowth of hair on the face—a number much larger than can be seen in any haphazard collection of women selected from the everyday world. The overgrowth is not a mere pencilling of down on the upper lip and chin, but hirsute appendages capable of arousing in some men a feeling of envy. It would also be observed that these cases are represented by a lusty and strong type of physique, thus conveying the impression that the overgrowth is correlated with animal vigour.

At the present time there are resident at Claybury Asylum ten cases of hypertrichosis. Two of these are married—one with two children and the other childless; the remainder are single and have no offspring. Two of the single women have an abundance of hair on their lower extremities, but in the remainder the distribution of hair is normal. All have menstruated regularly, height and weight are above the average, and the type of insanity in each is that of depression. The excessive amount of hair on the face has been developed in adolescent life and not after the climacteric. All being sensitive on the subject, to please them a razor has frequently to be used. Some even endeavour to get rid of the disfigurement by rubbing with pumice-stone. No history as to hereditary transmission can be elicited.

The question as to what are the causes leading to this form of hirsutism is shrouded in mystery, but I would venture to suggest that there is evidence which goes to show that the secretions of the suprarenal glands may be important factors. Before touching on this point it would be as well to remember the advice of Dr. T. B. Hyslop: "That not only may there exist a functional increase or a diminution of one type, but also a relative or compensatory increase or diminution of the secretion of one or several of the undamaged remainder. ...... It is warrantable to assume that a lesion of any important gland makes itself felt throughout the whole of the chemical interchanges of the body." I pass on to touch briefly on some of the secretions.

Ovaries and testicles.—With the development of the sexual organs there is marked growth of hair. In women the cessation of the sexual functions at the climacteric does in some cases correspond to the excessive growth of hair on the face; but, considering that all women pass through this change and so few who suffer from hypertrichosis, the cause of the overgrowth cannot altogether depend on the secretions or lack of secretions of these glands.

Thymus gland.—This gland apparently becomes functionless about puberty, and there is at this time an increase in growth of hair. It has been suggested that it is the thymic secretion which inhibits the sexual development with its associated hair growth. Removal strikingly impairs the development of the osseous system and the genitalia.

Thyroid gland.—When there is a diminution of secretion the hair of the scalp becomes scanty and prematurely grey, with a falling off from the eyebrows, eyelashes, axillæ, and pubis. With thyroid medication the hair again grows.

Pituitary gland.—This does not appear to have any influence on the growth of hair.

Suprarenal glands.—The cortex forms, in man, at least 90 per cent. of the entire bulk of the gland, and it is the enlargement of the cortex which characterises the adrenal glands of the higher animals. They exert a powerful influence on the growth of the hair, for in a few instances hypertrophy has been associated with early sexual development of hair. On the other hand, disappearance of the pubic hair and non-development of the genital organs have occurred in connexion with defective suprarenals. Dr. T. R. Elliott, of University College Hospital, states: "The cells of the cortex are derived from a mass of tissue close to the kidneys in the neighbourhood where the sex gland arises. As the latter, testis or ovary, descends to the pelvis, it carries with it buds from this mass which may be scattered along the line of descent and form accessory cortical adrenals along the spermatic veins. There is reason to believe that other buds are embedded in the sex gland itself, giving rise to the lutein cells of the ovary or the interstitial cells of the testis. By these cells are determined the sexual characteristics of the individual."

Some forms of cortical overgrowth cause an early adolescence and sexual precocity. The young male acquires hair on the face and pubes years before the proper time, and his body at nine years becomes that of a diminutive but strongly built man. The female, curiously enough, under like conditions, loses the characteristics of her sex, hair growing on the face and her body assuming a masculine contour. Dr. Gordon Holmes describes a case in which a perfectly normal young woman had at the age of 20 ceased to menstruate, and this she attributed to fright. A beard commenced to grow and the body assumed a masculine appearance. Four years later a tumour of the right adrenal was removed, but time has not yet permitted of the hoped-for result—the return to femaleness.

The medullary portion of the suprarenals has, apparently, only a very close connexion with the nerves of the sympathetic system.

From the presence of the lanugo, or down, on the human fœtus we may infer that man is descended from some animal which was born hairy and remained so during life. In the infancy of the race, and before man started to conquer the earth from the Equator to the Arctic regions, a complete covering of hair may have been a useful protection, not only from wet weather but from sudden chills. Gradually, as his brain developed and his intelligence evolved, by natural and sexual selection he cast off his hairy clothing and supplied himself with substitutes derived from the animal and vegetable worlds. Other animals find a niche in the world into which they fit themselves, rest, and are thankful, but insurgent man travels along the open road and no niche is good enough for him. This being so, he has to be capable of adapting himself to all conditions of existence, as otherwise he would have found himself in a cul-de-sac. The power ever thrusting him forward is the function we term mind, which precedes and creates for itself the structure we call body and is itself an evolutionary product. The loss of hair is thus correlated with the growth of intellect, and this may to some extent explain the baldness which is always conspicuous by its presence at the meetings of learned societies. The superman will most likely be a completely hairless creature. Darwin holds that, as the body in woman is less hairy than in man and as this character is common to all races, it is right to conclude that it was our female semi-human ancestors who were first divested of hair for some natural advantage, and that this partial loss, because it exposed the beauty of the skin, became highly esteemed as an ornament by our male progenitors, and so gradually by sexual selection the denudation proceeded. With civilised man the sense of beauty may be intimately associated with complex ideas and trains of thought, but in the great majority of animals the taste for the beautiful is confined, so far as we can judge, to the mere attraction of the opposite sex. Where females have been the selectors the males are more highly ornamental; where males exercise the right of choice the opposite occurs. In the case of woman man has decided that smooth cheeks are ornamental, and this becomes transmitted exclusively to the female offspring, and those with an overgrowth are not sought for as mates and therefore die out. Anyone who has seen pictures of the Siamese hairy family must admit that they create feelings of repulsion. The beard is peculiar to man, and because it gives an aspect of virility to the face it acts as an attraction to the woman, thus becoming a secondary sexual character, and I have yet to hear of a civilised nation which looks upon a beard in a woman as anything else but a monstrosity. It revives the old prejudice that anyone with this stigma represented a person on whom Nature had branded a mark of mental and moral degeneracy.

> But thou art neither like thy sire or dam,
> But like a foul unshapen stigmatic—
> Marked by the Destinies to be avoided
> As venom toads or lizard's dreadful stings.
>
> —*Henry VI.*

The evolution and maintenance of sex is definitely for the purpose of reproduction, and is ordained for the sake of the race and the future. It is an instrument of progress becoming more powerful, more delicate, and more subtle in its work as the ages roll by. This is the evidence afforded by a survey of living forms in general, and emphasises the arguments of those who say that the trend of evolution is towards an increase of sex differences, and that, if history is to be trusted, there would appear to be a natural and indispensable decree for an increase of feminism in woman and masculinity in man. But if so, what is the inner meaning of the modern mode of clean-shaven faces? Is a moustache to be doomed because it is not only a constant emblem to a woman that a man is a man, but also reminds her of the unkind fate which condemns her to be born a female? Has facial hair lost its sexual significance because of the creation by the pampered luxury of peace of a feeling in woman that she no longer needs a protector, and will the war restore a beard to its original importance?

Claybury.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A LITTLE-RECOGNISED FORM OF CARDIAC THROMBOSIS.

By SAMUEL WEST, M.D. OXON., F.R.C.P. LOND.,
CONSULTING PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL.

THE common forms of cardiac thrombosis are: (1) the soft bulky gelatinous clots, described as *post-mortem clots;* and (2) the tough, more or less, decolorised clots which form the chief part of the *vegetations* on diseased portions of the endocardium, especially in connexion with the valves. As rarer forms are (3) larger and more or less *rounded masses* found in dilated cavities; they are usually attached to the cardiac walls, but may be free, when they have been called (4) *ball thrombi.* It is the pathological rarity of these two last forms that gives them their chief interest.

The form of cardiac thrombosis with which I wish to deal is of an entirely different character; it occurs in patients who have been long a-dying, as in phthisis or malignant disease. The clots present the usual characters of ante-mortem clots, being firm and tough, pale, and fibrinous. They are thin and flat and moulded to the shape of the ventricles and auricles, and represent these cavities in the stage of extreme contraction. The thickness varies in different parts, but averages one-eighth to one-quarter of an inch. The clot starts in the ventricles, behind the trabeculæ carneæ, and in the auricles among the rugosities of the appendix, and this connexion keeps them fixed. In the ventricle the clots form a thin, flat, triangular, pancake-like mass, 3 inches, it may be, in length and 1 to 2 inches in greatest breadth. A thin band may pass through the auriculo-ventricular orifice, to be continuous with a similar flat clot on the auricle, from which string-like processes may extend for some distance into the branches of the pulmonary artery and veins. Clots of this kind are, as would be expected, commonest on the right side of the heart, but they may occur on the left or on both sides together. Apart from their pathological interest these clots are of clinical importance, because they may become detached and thus cause fatal embolism. This cause of pulmonary embolism should be borne in mind when no source for the clot can be discovered in the veins.

Embolism of the aorta might similarly occur, and a case of this kind I recorded some years ago. The patient died suddenly. The main trunk of the aorta was found plugged with a mass of tough decolorised clot of considerable size. On unravelling this in water it opened out into a thin flat clot such as I have described, which could be readily placed *in situ*, and corresponded exactly with the cavities of the left ventricle and auricle.

It is strange that this form of cardiac thrombosis has not received more attention, as it is by no means rare.

Wimpole-street, W.

URETHRAL CALCULUS IMPACTED FOR 15 YEARS.

BY T. BATES, JUN., M.B., B.S. LOND., F.R.C.S. ENG.

THE patient was a male, aged 39 years, unmarried. The following history was given. The patient was circumcised in 1899 at the Middlesex Hospital. In 1900 he was seized with acute pain in the penis. A small calculus became lodged in the fossa navicularis. He consulted a medical man, who prescribed some medicine for him, and shortly afterwards he left London, since which date he had consulted no medical man, although the calculus remained *in situ*. I saw him on account of severe pain and swelling in the penis. I then found the distal half of the penis much swollen. Thin watery pus was discharging from the urethra. There was a muco-cutaneous fistula opening behind the glans penis.

The calculus, exact size. The upper view shows the dorsal aspect and the lower view shows the right lateral aspect of the calculus.

Operation.—An incision was made from the meatus urinarius to the muco-cutaneous fistula, the stone removed, and hæmorrhage controlled by catgut suture of the wound. A No. 12 bougie was passed once a week for four months as a precaution against stricture.

The stone weighs 58 grains; size $1\frac{3}{8} \times \frac{1}{2}$ in. The anterior third is smooth and blunt; the posterior two-thirds are rough and pointed. The anterior half is hollow, the walls being laminated, the inner laminæ being dark in colour and the outer ones pale.

Worcester.

THE Royal Dental Hospital, Leicester-square, has received a donation of £500 from the trustees of Smith's (Kensington Estate) Charity.

Medical Societies.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Dermatitis Herpetiformis.—Urinary Concretions.—Cases of Landry's Paralysis, Myasthenia Gravis, and Epileptic Automatism.

A MEETING of this section was held on April 23rd, Professor J. A. LINDSAY, the President, being in the chair.

Dr. C. M. O'BRIEN showed a boy, aged 14, who had been suffering from Dermatitis Herpetiformis since he was 3 months old. He was one of a family of nine healthy children, and up to the time of vaccination was in good health. He then developed a rash, which in its early stages caused much itching, was multiform, and well marked on the arms and legs. A peculiarity was its persistence and recurrence. It never totally disappeared.—Dr. WALTER G. SMITH said the disease was rare; he suggested "dermatitis multiformis" as a better name. He considered the persistence and recurrence its distinguishing marks. He looked upon treatment as of no avail.

Dr. WALTER SMITH read a paper on Urinary Concretions, their Origin and Modes of Formation, in which the following questions were brought forward: 1. Is there any essential difference between gravel (sand) and calculus? 2. Is there any general theory of calculus formation? 3. Is there a scale of relative frequency of the different species of calculi? 4. What do we know as to the determining factors leading towards or producing calculi? 5. How far can we trace the coöperation or interaction of colloids and crystalloids in their production? 6. Has the frequency of calculi sensibly decreased within recent times. Stress was laid upon conditions of altered or perverted metabolism in the etiology of calculus, and attention was called to our ignorance of the pathology of gout and to the exaggerated statements as to the alleged pernicious effects of uric acid in the blood. The conditions relating to relative solubility were discussed in some detail, and it was insisted that the relations between colloids and crystalloids are of prime importance in the etiology of urinary concretions.—Sir JOHN MOORE recalled his experience of 40 years ago at the Meath Hospital, when the surgeons were almost constantly operating for stone. He thought the prevalence of stone had decreased in recent years. He had always connected the subsidence of ordinary calculus with the introduction of Vartry water.—Professor H. METTAM said that urinary calculi, chiefly oxalate, carbonate, or mixtures, were met with in the domesticated animals. In a specimen shown at the Section of Pathology renal calculi were found in the lymphatic spaces outside the tubules. In the lower animals calculi of enormous size were met with. It had been observed that rams fed on mangolds, which are very rich in sugar, frequently developed calculi.—Dr. A. R. PARSONS asked for an explanation of the frequent occurrence of calcium oxalate crystals in the urine of diabetics.—Professor E. J. MCWEENEY said that during the past 20 years he had examined from 50 to 60 ordinary calculi and was strongly struck by the extremely dark colour of these oxalate of lime calculi; an oxalate of lime calculus found in the pelvis of the kidney was absolutely jet black with a very polished surface. This dark pigmentation of calcium oxalate calculi might be correlated with the fact that their surfaces are so rough that they produce small hæmorrhages.—The PRESIDENT said that in his experience in the North of Ireland calculus was rare, and he thought that a decrease had come about in recent times. The decrease might be accounted for by the extreme rarity of gout, which was much more common some years ago.—Dr. SMITH replied.

The PRESIDENT read the notes of the following three cases. 1. A case of Landry's Disease. He discussed the possibility of the case being one of acute ascending myelitis, acute poliomyelitis, or acute toxic polyneuritis, but was of opinion that these conditions could be excluded, and that the case was a genuine example of Landry's syndrome. 2. A case of Myasthenia Gravis. The points of distinction between myasthenia gravis and cases of aggravated neurasthenia were discussed, and stress was laid upon the predominance of muscle fatigue, the myasthenic reaction, the condition of the reflexes, the absence of pain, the absence of morbid introspection, and the alternating character of the symptoms as characteristic of the former disease. 3. A case of Automatism. The patient was a man, aged 60, of temperate habits and a history of good health. There was no history of hereditary nervous disease, alcoholism, or syphilis. His general health was excellent, and his weight was 14 st. 7 lb. There was no evidence of organic disease in any of the viscera. His story was that on several occasions he had found himself at considerable distances from his office without any recollection of what had happened in the interval. He had never had a convulsion, had never fallen or hurt himself, had never passed urine during an attack, and his condition had never excited the notice of any of those persons with whom he was associated. On recovering from a seizure he felt perfectly well, and there were no after phenomena. Physical examination was entirely negative. The patient was put upon a course of bromide and belladonna, and in a short time the attacks ceased. When last seen he had been free from attacks for a period of nearly five years.—Dr. H. C. DRURY considered that the first two cases were without question, but the third reminded him of a case of his own which he looked upon as of the nature of *petit mal.*—Dr. PARSONS agreed that the third case was one of *petit mal.* He recalled the case of a patient of his which ended fatally. At the necropsy nothing could be discovered wrong with the brain.—Dr. W. R. DAWSON agreed that the second case was not neurasthenia. In the third case, while listening to Professor Lindsay's account, he had made a diagnosis of *petit mal.* He considered the fact that the fits had ceased was an example of the good results produced by the combination of belladonna and bromide.—Dr. H. T. BEWLEY also discussed the first case.

The PRESIDENT, replying, agreed with the name of *petit mal* as better fitting the third case.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

"*Anger.*"—*Research in Connexion with Causation of Insanity.*

THE quarterly meeting of this association was held in the rooms of the Medical Society of London on May 18th, Dr. DAVID G. THOMSON, the President, being in the chair. Dr. Thomson having referred to the services to psychological medicine of the late Sir Thomas Clouston, the meeting passed a resolution of sympathy with Sir Thomas Clouston's relatives, the members rising in their places.

The PRESIDENT also said that Dr. J. Beveridge Spence and Dr. T. Seymour Tuke had recently lost their sons in battle, and the meeting expressed its sympathy with the bereaved parents.

About 100 books were presented to the library by Dr. T. B. Hyslop, who was cordially thanked for his generous gift.

Dr. HYSLOP then read a paper on "Anger," and said that many authorities considered that Germany was now running amok in an epidemic of maniacal fury. He regarded this as an instance of epidemic psychopathy, a repetition of which humanity was not likely to permit.—The subject was discussed by Sir GEORGE SAVAGE, Mr. H. F. HAYES NEWINGTON, Dr. J. N. SERGEANT, and Mr. W. F. SAMUELS.

Dr. DAVID ORR read a paper on Research in Connexion with the Causation of Insanity. Such research in this country, he said, up to the present time had been either isolated, neglected, or starved. At one period of our knowledge isolated effort could make some headway, but now the problems were much more complex, rendering essential the coöperation of several species of workers. Research had come to mean specialisation in a branch after a thoroughly broad preliminary training, and this must be given in a properly equipped central laboratory. Such laboratory must be prepared to give instruction in anatomy, physiology, pathology, bacteriology, chemistry, and serology as applied to the nervous system. There were many examples in history of the futility of attacking problems from a narrow standpoint. Dejerine had declared that in the study of the lesions in aphasia, macroscopic observation was not sufficient; there must be microscopical examination in serial stained sections of the affected hemisphere, or even of both hemispheres. Only by this means could the limits of the lesion be determined and the questions still under debate be solved. This must apply even more truly to such conditions as various types of insanity, epilepsy, agnosia, apraxia, &c. And there must be complete reciprocity between the laboratory and the asylum. Investigators in the domain of neuro-pathology must no longer recognise any line of demarcation between the brain and the nervous system. Clinical insanity, he considered, was best taught in a clinic where the cases were seen in the stage of early development; and the clinic should be in close touch with the laboratory. Both should be conveniently near to a medical school whose teachers could give special lectures and expert advice. No training could be complete without adequate clinical instruction. Each asylum should have its own pathological department, in which those who had been trained in broad neurology could work out problems for themselves; when in difficulties the central institute could be drawn upon for expert advice. The county asylum was not the best place in which to learn, because so seldom were cases seen there in the early stage.—Mr. HAYES NEWINGTON hoped that those who would find the money for research would be impressed by what Dr. Orr had advanced; he had made out an excellent case for it.—Dr. HUBERT J. NORMAN expressed the view of many in the asylum service as to the small opportunity they received for doing any research, though they fully saw the necessity of it. To conduct this work men must have the enthusiasm for it which the author had shown.—Dr. HARVEY BAIRD spoke of the good work being done at Cardiff Mental Hospital, due largely to the keenness of the superintendent, who succeeded in impressing the borough authorities as to the need for supporting the work.

Dr. ORR replied, expressing the view that the necessary money would be forthcoming.

ROENTGEN SOCIETY.—The annual general meeting of this society will be held on Tuesday next, June 1st, at 8.15 P.M., at the Cancer Hospital, Fulham-road, S.W. The annual report and the honorary treasurer's report will be received, and a ballot will take place to chose the president, members of council, and officers for the ensuing session. The electrical and radio-therapeutic department of the hospital will be open for inspection and there will be a number of demonstrations given. Members desirous of showing new apparatus, negatives, or lantern slides are requested to communicate with the honorary secretary, Dr. Robert Knox, 7, Harley-street, London, W.

THE HENRY SAXON SNELL PRIZE.—This prize, which was founded to encourage improvements in the construction or adaptation of sanitary appliances, is awarded by the council of the Royal Sanitary Institute every third year. The prize consists of 50 guineas and a silver medal, and it will be awarded this year for an essay on Suggestions for Improvements in the Sanitary Arrangements and Appliances on Board Ship for Passengers and for Cattle. Further particulars may be obtained from the secretary of the Royal Sanitary Institute, 90, Buckingham Palace-road, London, S.W.

KING'S COLLEGE: UNIVERSITY OF LONDON.—We are informed that the course of lectures by Professor Brodie on the Gases of the Blood, announced last week, will not be delivered owing to Professor Brodie's services being required for military purposes.

ASYLUM WORKERS' ASSOCIATION.—The annual meeting of this association was held on May 19th, when Sir John Jardine, K.C.I.E., M.P., presided. It was stated in the report that although the value of the association had never been more apparent, the membership had shown a decline for the year 1914.

PLAGUE IN HONG-KONG.—The Colonial Office reports 13 cases of plague, with 12 deaths, at Hong-Kong in the week ending May 22nd.

Reviews and Notices of Books.

Abdominal Operations.

By Sir BERKELEY MOYNIHAN, M.S. Lond., F.R.C.S. Eng. Third edition, revised. In two volumes, fully illustrated. Pp. 488 and 492. London and Philadelphia: W. B. Saunders Company. 1914. Price 42*s.* net.

THE field of surgery is so vast that it is now, more than at any previous time, necessary to limit the purview of any work on surgery if the study of it is to be at all thorough; and at the present time, when specialism for good or evil has assumed such an important place in modern medicine, it is more than ever essential to confine the subject within reasonable boundaries.

When the first edition of Sir Berkeley Moynihan's work on the surgery of the abdomen appeared it was generally recognised that an extremely valuable treatise had been presented to the English-speaking peoples, and one which from the originality and experience of the author should prove of the greatest value to surgeons. This, the third, edition has grown to two volumes, and when we consider the importance of the subject and the advances which are being made almost daily in this branch of surgery, we must acknowledge that there is ample reason for the enlargement of the work. Although the book is entitled "Abdominal Surgery" there are certain intentional omissions; only those abdominal operations are included which are common to the two sexes, for no gynæcological operations have been introduced. Moreover, the surgery of organs like the kidney and the bladder, which are partly intra- and partly extra-peritoneal, is omitted, and the various operations for hernia are not included. In a work such as this the author was naturally sometimes in doubt as to whether he should include a certain operation or not; and we think that Sir Berkeley Moynihan has acted wisely in including in the work only those operations which he practises himself, and a few others which are generally recognised as worthy of recognition. One remarkable fact deserves mention, and that is that no allusion is made to mechanical aids for the union of bowel or stomach; the author holds that the purpose of these aids has been served and that their interest is now only historical; as good or even better results can be obtained without them.

It is needless to discuss the whole work in detail, but we may say that in this, as in the other writings of the author, the facts are given in simple language, and he speaks with the assurance of one who knows his subject. The illustrations are numerous and clear, and the printing is all that can be desired.

The Infant: Nutrition and Management.

By ERIC PRITCHARD, M.A., M.D. Oxon., M.R.C.P. Lond.; Physician to Queen's Hospital for Children; Physician to Out-patients, City of London Hospital for Diseases of the Chest, Victoria Park, &c. London: Edward Arnold. 1914. Pp. 265. Price 3*s.* 6*d.* net.

THE subject of the nutrition and management of the infant is one which, in view of its great national importance, has within recent years received very marked attention, and large numbers of text-books and popular manuals have appeared. The vexed question of infant mortality and the methods of reducing it cannot receive too much attention, more especially from those who, like Dr. Pritchard, have devoted special practical attention to the subject. We therefore welcome the little book before us as a thoughtful, suggestive, and stimulating contribution to this matter. Although many of the views expressed in it are new and some of them heterodox, they are obviously the result of careful thought, wide experience, and a practical examination of the problems involved.

The subject of breast feeding is first dealt with, and great stress is laid upon the importance of perseverance in the attempts to secure breast feeding in spite of difficulties. Numerous practical hints are given of measures to promote a regular and satisfactory flow of milk. Some interesting observations are next given on the nutrition of the infant and on the determination of the quantitative food requirements. By means of the "test-feed" in breast-fed cases Dr. Pritchard has accumulated some striking data. He rightly points out that it is unscientific to prepare hard-and-fast tables for general application. Each case must be considered individually, since its needs depend upon the rate of growth, the work done in bodily movements, and the rate of heat loss of the particular infant. He arrives at the conclusion that the demand for food in an infant can be increased by less clothing, more air, and more exercise. The motor functions of the digestive tract and the training of nerve centres next receive attention, and some valuable suggestions are made as to the proper education of these functions and the avoidance of disturbing factors. The subject of constipation is examined in some detail, and here the importance of quantitative and qualitative defects in diet is emphasised, as well as the value of endeavours to induce regularity of habit. Dr. Pritchard inveighs strongly against the administration of purgatives and enemata, especially against the dose of castor oil so frequently given to infants in the first few hours of life, which he regards as often provocative of subsequent constipation. Some common symptoms in infancy, such as marasmus, vomiting, crying, coughs, diarrhœa, thrush, and sore buttocks, are next examined, and the rational treatment of each is considered. A chapter is devoted to a consideration of the uses of dried milk in infant feeding, of which Dr. Pritchard apparently has a high opinion. The uses of petroleum are next dealt with in detail, and some useful directions are given in regard to preparation and dosage. Other subjects considered are the causation of convulsions in infancy and the causation and treatment of rickets. The concluding chapter is devoted to a matter to which Dr. Pritchard has devoted special attention—viz., the instruction of mothers in mother-craft.

We can strongly recommend this book to the general practitioner, and especially to those concerned in the management of infant consultations or of mother-craft centres.

Text-book of Public Health.

By E. W. HOPE, M.D. Edin., D.Sc., Professor of Public Health, University of Liverpool. Eighth edition, revised and enlarged. Edinburgh: E. and S. Livingstone. Pp. 267. Price 5*s.* net.

PUBLIC health and forensic medicine used frequently to be taught at the medical schools by the same lecturer and in the same course, and a standard text-book in both branches, which served for generations of students, was the volume known as "Husband." The two subjects are now seldom thus combined in teaching, and Dr. Hope has been well advised to issue separately the portion of

"Husband's Forensic Medicine" for which he was responsible. This little volume should go a long way to meet the requirements of the medical student or the practitioner reading for the Diploma in Public Health, for whom it is intended. It is full of well-arranged information, given with the lucidity which characterises Dr. Hope's writings, and is well illustrated. The main object of the book has been kept in view throughout, and care has been taken to quote sound authorities and to draw upon the official documents and reports which govern the every-day practice of medical officers of health and school medical officers. Some of the most useful information in the volume is derived from Dr. Hope's special experience in Liverpool, and as a whole the work deals essentially with the practice of public health in large urban communities.

The new edition is well up to date in such matters as the methods for dealing with tuberculosis which have followed the National Insurance Acts, and other recent legislation and changes of administration which bear on the curriculum of instruction in public hygiene at the present day.

Zoology: An Elementary Text-book.

By A. E. Shipley, D.Sc., F.R.S., Master of Christ's College, Cambridge, and E. W. MacBride, D.Sc., F.R.S., Professor of Zoology at the Imperial College. Cambridge University Press. Third edition. Pp. 752. Price 12*s.* 6*d.* net.

In view of the authoritative names of the two authors and of the fact that the present is the third edition of their useful text-book, it will hardly be expected that much criticism can be applied to this manual of zoology—that is, in the way of detection of error—though, as they tell us in the preface, the third edition is in some parts substantially altered. There are, however, a few points to which we should like to direct their attention, where some little improvement can be introduced in a succeeding edition.

For instance, in dealing with the structure of birds (p. 629) the authors write that "according to one of the best bird specialists the external characters furnish just as reliable data as the ill-known internal organs" for the classification of this group. It is not clear whether this is in effect a quotation or a mere verbal *ipse dixit* of the eminent one. In any case it is singularly at variance with fact; for it would be hard, if not impossible, to find any group of animals whose internal anatomy has been studied in greater detail or more comprehensively than has been the case with birds. There is not a bone, not a muscle, not a viscus that has not been treated of by one or more of the seven or eight zoologists who have specially dealt with these vertebrates.

In describing the skull of Chimæra the authors naturally use the term "autostylic," introduced by Professor Huxley in his well-known memoir upon the skull of Ceratodus, for the suspensory condition of the jaws. Having decided to adopt this widely used word it was unnecessary, as we think, to replace it on p. 473 by "holostylic." The disadvantage of the "type system" in treatises on zoology (which, however, it must be confessed, can hardly be avoided) is, to our mind, that it is apt to give wrong impressions while correctly stating absolute fact. Thus, the authors of the present treatise, in distinguishing between the earthworm and the leech, remark that "in leeches, unlike the condition in the earthworm, the genital pores are single and median." The student might go away with the fixed idea that this statement covers all leeches and all earthworms, which would, of course, be incorrect. As a matter of fact this danger could be easily avoided by adding after the word "earthworm" some such phrase as "but not in all genera." A slight blemish seems to us to be shown in the definition (p. 166) of the Hirudinea, where the dogmatic statement of characters is immediately followed by a definition of the suborder Acanthobdellidæ in which several of these characters are shown not to apply. This could have been avoided by the use of such a word as "generally," interspersed with the requisite liberality.

It must not be assumed from these few observations that we are not impressed by the general and dependable accuracy, and thus usefulness, of this very handy volume. We merely proffer some suggestions for the future.

Significato Bio-filosofico della Guerra.

By Dr. William Mackenzie. Genoa. 1915. Pp. 101. Price 2 lire.

This little brochure is a praiseworthy but somewhat hopeless attempt to solve by means of biological and metaphysical methods the question, "Why do the heathen rage so furiously?" The author starts with the premise that every cell has two apparent tendencies—to become more complex and more specialised—hence grades and types become evolved. The same process applies to groups, the final evolution of which is seen in national states. Further, as every organism must fight in order to exist, this applies also to states, but the author points out that the "struggle for life" does not constitute the exclusive protection of the biological edifice, it is only a mode, a partial aspect of development, the other aspect being strictly complementary and found in "collaboration," which may attain to complete denial of self for the reciprocal advantage of the organic constituents.

Nations and states, says Dr. Mackenzie, live as if they wished to become more and more "national" and at the same time more and more "dominant." The entire drama of history according to his theory consists in the undoings of one or the other tendency and in the temporary over-ridings of one over the other; the drama—that is to say, of oppressed nations, as also of crumbling empires, from whose ashes there arise again and for ever other nations and empires. The populace, or those who think they govern them, very often maintain, and in good faith, that the object of a given war resides in the affirmation or in the defence of a given right, interest, or principle; nevertheless, whatever their apparent interests or principles may be, the ultimate scope of every war, whether confessed by those responsible for it or not, must ever be the aggrandisement of the nation or state, either directly by some positive addition or indirectly by liberation from some burden or menace. The same duplex necessity of sustenance and increase which is incumbent on the smallest protozoon in its drop of water weighs equally on nations and states; peoples with their own struggles, gigantic in comparison with those of the protozoon, have no other object than to increase in space and time, although they themselves know nothing of it.

Whether Dr. Mackenzie has satisfactorily and convincingly proved his thesis must be left for the reader to judge for himself, but to help his decision we may summarise two judgments passed by the author on two contemporary students of war—

Wundt and Bergson. The former professes to find the determining factors of the present war in a "low desire for gain" and in the "diplomatic intrigues" of those who direct the conflict against his compatriots, but above all he believes that the origin of the war must be ascribed to the will of a king (now deceased) and an ambitious group of political adventurers. A strange error, comments Dr. Mackenzie, and full of suggestion is that of this learned man who during his long scientific career has been occupied with the study of psychology, and especially the psychology of peoples. How clearly the hidden will of the nation speaks through his mouth, which befogs his thought, otherwise so clear, and makes it a blind instrument of war!

But little better is the conclusion arrived at by Bergson in his well-known academical and bellicose treatise, which is justly celebrated for its elevated style. This treatise contains in substance the startling and more or less explicit assertion that the present war is above all a struggle of the material against the spiritual, and, as is natural, the illustrious philosopher finds all the spiritual on his own side and all the material on that of the enemy. With regard to this attitude Dr. Mackenzie says with truth that science and philosophy will gain more by the silence than by the publications and speeches of those scientists and philosophers who in times of difficulty for their own country, and for the whole world, make a profession of political faith, thinking to further it by biological arguments which do not fit in with any faith. Such lucubrations conduce to a single and most deplorable result—that of causing and fostering that ignorant hate among men which is the main "enemy" to be fought against.

Radiography, X Ray Therapeutics, and Radium Therapy.

By ROBERT KNOX, M.D. Edin., M.R.C.S., L.R.C.P. Lond., Honorary Radiographer, King's College Hospital; Director, Electrical and Radiotherapeutic Department, Cancer Hospital, London, &c. With 64 full-page plates and 245 illustrations in the text. London: A. and C. Black, Limited. 1915. Pp. 406. Price 25*s.* net.

THIS is the first really comprehensive volume on the whole subject of the X rays and radium that has been brought out by a British author. While we have had many similar volumes in the past they have emanated for the most part from the continent and America. This is not because British radiologists have been behind in their researches, but rather because as a class they are more content to wait until they are sure of their ground before stating their views in permanent form. As a matter of fact, a very large proportion of the writings of foreign radiologists have added little to our permanent knowledge of radiology.

In the present volume we have a very complete treatise on the present state of our knowledge; so complete and comprehensive is it that in our opinion it goes rather beyond the author's aim, "to present to the student and practitioner in as concise and as practical a form as possible the essential points in radiography and radium therapy." The beginner who attempts to get his knowledge of a subject so highly technical from this volume will find himself rather bewildered with the task before him. The book appeals more to those who have acquired their first principles and desire to increase their knowledge extensively. This applies particularly to the first chapters dealing with apparatus. A perusal of this part would leave the beginner with a sense of incompleteness; however ample it may be for those whose technical knowledge is fairly extensive, we do not think it meets the requirements of that greater number of aspiring radiologists whose attainments in this direction are of a very sketchy character. As regards the illustrations in this section, it is perhaps unfortunate at the present time that so many of them are from the catalogues of Teutonic manufacturers. Diagrams are more valuable to the student than illustrations of the finished article of one or other maker, but they require to be carefully prepared and selected. In this connexion we may instance the diagram of a centrifugal mercury interrupter on p. 17. We think the average beginner will find no little difficulty, with only this diagram before him, in understanding how this apparatus works. The same criticism applies to the section on X ray tubes and the various accessory appliances used in radiology. Fundamental principles are passed over too briefly, there are too many catalogue illustrations, and too few explanatory diagrams for a work that sets out to teach the beginner.

When we come to the practical application of the X rays in the diagnosis and treatment of injuries and diseases, we have nothing but praise for the scope of the work Methods are clearly described and the resulting plates are illustrated profusely and well. A valuable feature of the illustrations is that all are shown in duplicate, one as a negative and the other as a positive. As a radiologist almost invariably bases his opinions on the negative plates their reproduction in this form is a very decided help to the student in familiarising himself with the immediate results of his work. A very useful chapter is that on the development of the bones, showing the appearances of the epiphyses at various ages. This will be of great help in the interpretation of plates made from young subjects—a most difficult matter at times. The chapters on the examination of the thoracic, abdominal, and pelvic organs are complete and instructive. There are few who will not find here many valuable suggestions, and as this is a branch of radio-diagnosis that is bound to be increasingly important as time goes on, a study of the whole section of the work is recommended.

In the section on X ray therapeutics we find the same thoroughness displayed as in the previous part. The various forms of technique, methods of dosage, and other necessary details are supplied in a clear and concise manner. Suitable modifications are given for the treatment of different diseases, and numerous illustrations show the effects produced after treatment by the X rays, some of the cases of inoperable malignant disease being improved in a remarkable manner.

The last part of the book deals with the physics and application of the rays from radium in the treatment of disease, the section on physics having been contributed by Mr. C. E. S. Phillips. This part of the work will be found a valuable guide.

The book, which has been printed and published in an excellent manner, is bound to achieve success.

A System of Veterinary Medicine.

By Various Writers. Edited by E. WALLIS HOARE, F.R.C.V.S. Vol. II.: General Diseases; Parasites. London: Baillière, Tindall, and Cox. 1915. Pp. xx. + 1600. Price of the two volumes 50*s.* complete.

IT is many years since an authoritative work on veterinary medicine was produced in the British Isles, and since that time great advance has been made in the science. Many a practitioner in veterinary medicine has felt for some time that his own knowledge, limited as it necessarily must be by his opportunities, was still ahead of that supplied by the text-books, and that he could gain little progressive information from a perusal of their pages. It was somewhat of a reproach that no really good and recent standard British work of reference existed to guide, influence, and advance the knowledge of the veterinary surgeon. The reproach began to disappear when Mr. Hoare's System was issued. The information thus supplied to the veterinary profession has been derived from numerous sources, is presented in plain language, has been furnished by many of the best minds in the veterinary profession, and supervised by an editor who stands high as a clinician and scientific observer.

The first volume of the "System of Veterinary Medicine," it may be remembered, dealt with the "Microbial Diseases" of the various animals. The second deals with "General Diseases." Here the diseases described are, with few exceptions, those frequently found in this country—those, indeed, occurring almost daily among animal patients. All the contributors, 15 in number, are specialists in their several domains and have had extensive experience in treating the diseases of the horse, cow, sheep, pig, dog, cat, bird, and goat, upon which they write.

The editor writes on the diseases of the digestive system in the horse. His communications to the veterinary periodicals are evidence that he has spent years of study and research in trying to simplify some of the difficulties of diagnosis which here present themselves, and to suggest lines of rational treatment. He has, we think, succeeded in producing an admirable exposition of the subject. The ailments of the alimentary system in the other animals are also comprehensively and adequately dealt with, a special word of praise being due to the authors of the articles in this section on the ox (Mr. H. Begg, F.R.C.V.S.), the dog (Mr. E. Wallis Hoare, F.R.C.V.S.), and the pig (Mr. G. Mayall, M.R.C.V.S.). The division of the digestive ailments in the ox is good, and the treatments advised are uncomplicated and likely to be profitable and effective. The consideration of diseases of the digestive system in the pig fill a gap too frequently noticeable in books on this animal. A good knowledge of feeding, hygiene, and the physiology of digestion in porcines will be profitable alike to the professional adviser, the breeder, and the owner. The various forms of respiratory, urinary, circulatory, nervous, and parasitic disease receive full notice, and the work concludes with a section on poisons, and an appendix on the disease of sheep called "scrapie."

We have here a store of information, indispensable alike to veterinarians and students of comparative pathology. The contributions are from trustworthy sources and the book is well arranged. The publishers also have done their work well.

JOURNALS AND MAGAZINES.

The Journal of Comparative Pathology and Therapeutics. Vol. XXVIII., Part I. March, 1915.—In the March number, which is the last number of this valuable journal to reach our hands, there is abundant evidence that good work is being done by the veterinary profession. Captain E. Clive Webb, A.V.C., F.R.C.V.S., gives some results of Transmission Experiments and Arsenical Treatment of Trypanosomiasis of Donkeys and Mules in the Anglo-Egyptian Sudan, from which he concludes that arsenic appears to have a specific trypanocidal action in a large percentage of cases and clears the blood of trypanosomes. He believes that he may claim about 45 per cent. of cures, but justly observes that this claim cannot be made good until the cases have been under observation for a longer period. He maintains that to obtain successful results one must be prepared for casualties due to susceptibility and overdosage.—H. R. Seddon, B.V.Sc., of the Veterinary Research Institute, University of Melbourne, describes some observations on the methods of using the agglutination test in the diagnosis of the disease in bovines caused by the bacillus of contagious abortion. He uses vaginal or uterine exudates or the fluids from the fœtus or fœtal membranes, blood serum, or milk. He gives an account of the technique employed, describes the quantitative factors in the agglutination reaction, and comes to the conclusion that the method is of distinct value in making a diagnosis.—Principal Mettam, M.R.C.V.S., B.Sc., Royal Veterinary College of Ireland, Dublin, describes a case of lympho-sarcoma in the horse with arterio-sclerotic changes in the heart and lungs, a case of arterial sclerosis in a dog, two different malignant growths in the same dog, and an embryoma of the brain of the horse.—H. L. Watson-Wemyss, F.R.C.P. Edin., gives a sound summary of recent work on vitamines, especially in relation to beri-beri, the scurvy groups of diseases, pellagra, rickets, and tetany, and also on vitamines in their relation to growth, and calls special attention to von Noorden's oatmeal treatment of diabetes.—C. M. Wenyon, M.B., B.S., B.Sc. Lond, Director of Research in the Tropics to the Wellcome Bureau of Scientific Research, writes on the organisms found in piroplasmosis of Rhodesian sheep as observed by Bevan.—J. A. Griffiths, M.R.C.V.S., Department of Agriculture, Veterinary Division, Zomba, Nyasaland Protectorate, gives an account of Demodectic Mange of domestic animals in Nyasaland, and maintains that it is not economical to endanger the animals of the community by prolonging the life of infecting subjects, but that where treatment is considered desirable every possible precaution should be taken to prevent the disease spreading either by direct contact or through the medium of contaminated articles likely to come in contact with healthy animals.—A. Leslie Sheather, B.Sc., M.R.C.V.S., Research Laboratory, Royal Veterinary College, London, describes an improved method for the detection of mange acari dependent on the fact that these acari can be subjected to boiling caustic liquids without undergoing any outward alteration.—The general articles conclude with a revised check list of the animal parasites of domesticated animals in India by S. H. Gaiger, M.R.C.V.S., Indian Civil Veterinary Department, a list that from its size should be fairly complete. Several useful abstracts complete a most interesting number.

Dental Record.—The April and May issues of this journal contain a paper by Mr. J. F. Colyer on Dento-Alveolar Abscess and Dental Cyst. The paper is founded on a museum demonstration given at the Royal College of Surgeons last October, and forms an illustrated account of many of the specimens in the Odontological Section of the museum. The author shows that sepsis around the roots of the deciduous molars frequently involves the developing premolars, and in some cases leads to necrosis of those teeth. Some instructive specimens of palatal abscess are described, and attention is drawn to the large destruction of bone caused by these abscesses. The morbid anatomy of dental cysts is fully described, and illustrations are given of cases in which these swellings have encroached upon the antral cavity. There are over 50 illustrations.—In the May issue Mr. J. H. Mummery gives an account of his recent researches on tubular enamel, and comes to the conclusion that calcification commences in the prisms and then proceeds in the interprismatic material, and that the tubes run between the prisms and not in the centre of the prisms.—In both issues there are papers by R. Eckermann, of Malmö, on the etiology of caries.

MEASLES AT ST. AUSTELL.—At a recent meeting of the St. Austell rural district council it was decided to put into force the order of the Local Government Board for the notification of the first case of measles in every house. The medical officer of health has reported the continued prevalence of measles in the district.

THE LANCET.

LONDON: SATURDAY, MAY 29, 1915.

The Question of Conscription.

THE date of the statutory or religious holidays is very usually one against which we set in order our private affairs; and, whether we wish it or not, it is a date by which our attitude towards public matters is regularised. Instinctively we propose that one thing shall be done before the holidays, or that another thing shall be put off until after the holidays, and thus a great arrangement of business in an undefined and informal way goes on throughout the country round about these days of festival. The result is to find many people entering upon their work with renewed ardour after the holidays, not so much because they are physically refreshed, but because, in common phrase, they know "where they are." Whitsuntide found not only this country but the whole civilised world engaged in a contest of a sort that did not allow of this or that being put through hurriedly in order to get rid of the trouble by a certain date; still less do the conditions of war permit of any proceeding which is recognised as necessary being relegated to the future, however near; therefore it is in the nature of a coincidence that during the Whitsuntide holidays there should have occurred in the conduct of the war much the same kind of altered demeanour that characterises careful tradesmen who have estimated their commercial position upon the information gathered from a holiday stocktaking. And the coincidence has its value: it is a fact that the mind of the people has been prepared by the holidays for great alterations. Undoubtedly the nation is realising far better than hitherto "where we are." There has been of necessity a reviewing of the immense and terrible situation, and it is quite certain that the temper with which the war is to be carried on will now change in this country in a way that may surprise us all. There will be with us a more coherent idea as to the task that is before us and a more distinct apprehension of how the various calls on the national spirit and resources should be met. And the outcome of this change may be conscription, a measure of great medical significance in the circumstances.

Until quite recently there prevailed in this country a general and vague optimism. We remained under the influence of financial quidnuncs who said that the war could not last longer than the summer of 1915 because credits would be exhausted and supplies would not be forthcoming. Fortunately for the Allies no particular heed was paid to these prognostications, and preparations for a prolonged struggle were put in hand, though it is open to question whether they were undertaken with quite the necessary vigour—for which falling away from a strenuous ideal the said quidnuncs have to bear at least part of the blame. We were told, moreover, that the central European empires, cut off by our fleet from intercourse with the world, and suffering notably in East Prussia from interference with agricultural activities, would cease to produce the food-stuffs necessary for the support of the population, especially in view of the large waste which always occurs in time of war. No one who read the article published in THE LANCET upon the German reserves of food and their maintenance,[1] could have failed to gather that to speak of grave shortage of food-stuffs in Germany was quite premature. The possible position in Germany, in the case of British interference in the war, had been envisaged long ago by our enemy; precautions had been taken with the vigour and particularity that characterises all the German public actions, and we now know that the people who expected to find Germany hungry by the summer of 1915 were as wrong as those who expected to find her bankrupt at the same date. Gradually these things have been dawning upon the public, and it is very interesting to see how infectious the process of thought is. Within a very short space of time the public, which had so relied upon the optimistic prophecies of experts, passed into an unnecessary phase of gloom in which the resources of the Germans and Austrians appeared to be illimitable. Many of the journals of the country then began to represent this change of temper, and a deeper feeling of apprehension was produced which in some measure was as illogical as the previous attitude, based although that may have been upon ignorance. For while it is clear that the aggressive tactics which have marked our conduct of the recent stages of the war have not produced results commensurate with expectation, it is equally certain that the enemy must be far more disappointed with the position. And in one area the tide ran definitely against our cause; a great feeling of nervousness was produced, and the Government took stock of the situation. The result has been, we think, the production of the salutary impression that we must not deceive ourselves and the formation of a new administration representing the united will of a resolute people. Where we have been right we shall continue, and where we have been wrong we shall revise. Exactly at this moment, a moment which had been closely forecast by many, Italy enters the arena, marking a definite step in the progress of the war at the moment when our national temper required stiffening. It has compelled that rearrangement of ideas which is so particularly fitting to the holiday season. We see that attempts to make scapegoats for past blunders are not only ill-judged, but tragically wasteful of time; we fix our gaze on the future.

Medical men are perpetually engaged in clinical struggles where victory goes in the end to the therapeutists who, following now one indication and now another, may commit faults in technique. What, then, are most to be dreaded are futile recriminations; what, then, are most to be desired are a calm review of the position and reinforcement from expert advice. A section of the public are apparently willing to abuse those who have the charge of the conduct of the war on evidence of whose value they can know but little. We hope and believe that this unworthy tendency will die down, and that the example of Italy, which has thrown in its lot with the Allies in perfect knowledge that failure connotes national ruin, will strengthen, if this be needed, our determination to do all to bring this war to a speedy conclusion. How can we best show our Allies, who are aware at what cost and with what devotion we have already supported the common cause, that our future undertakings will be still larger, and will reflect more surely our dour decision to win? We have a new spirit upon us, and while on the one hand it should lead to an increased production of munitions, it is not so certain that it will increase our voluntary levies of men. The populace is waiting, we believe, to be released from the responsibility of initiative. Our military authorities think that it is absolutely necessary that we should have in training further large numbers of men to take the place of the heavy depletions which we cannot but expect. The remedy is surely some form of conscription, and with this procedure a medical journal would have no difficulty in finding itself in accord. We believe that some form of conscription would be for the good of this country at the present moment, and would serve both its mental and its physical health. No one knows better than the general practitioner how unequally the call for men to the colours has been responded to in different localities and among different classes. His peculiar knowledge of the population enables him to say for certain of any locality that some in it have gone to the war, quite enthusiastically, who should have formed the material for later drafts; and that others are still outside the army, when the army needs them, when they would make good stuff within its organisation, and when all that is required to secure their adhesion is to provide the method of making up their minds for them. Conscription would find strong support in the medical profession if it is advanced as a desirable measure in the existing circumstances.

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[1] THE LANCET, Feb. 20th (p. 389), 1915.

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Flies and the Spread of Disease.

THE subject of spread of disease through the agency of flies has of late years met with a good deal of attention, and at the present time deserves careful consideration on account of the existence of a very large number of encampments in all parts of the country. Under the conditions of camp life in hot weather the influence of fly prevalence on the health of the occupants may be most important. If it is particularly with regard to the spread of typhus fever, enteric fever, and cholera that flies have been found to play an important part, it must not be forgotten that many other infections are disseminated by them, and that we do not really know the scope of their influence for ill. To the inhabitants not only of our own country but of the greater part of Europe the conveyance of disease by flies is for this coming summer a matter of very great moment. Every large European nation is more or less under arms, and the aggregation of huge bodies of troops in more or less temporary quarters inevitably brings about a state of things which encourages an increase of flies. The medical authorities in charge of encampments are well aware of the danger, and are not likely, in this country, to be careless in their measures against fly multiplication.

So far good. But for the ordinary town dweller special supervision and instruction as to his duty to his neighbour, as well as to his own household, may probably be advisable. The medical officer of health of Bermondsey carried on a systematic campaign against flies last year. A register was kept of all places where manure heaps or rubbish accumulations existed; about 20,000 handbills were distributed to householders, and posters were exhibited throughout the borough, explaining to the public what the danger was and what should be done to prevent it. Such a campaign might, we think, be instituted with advantage throughout the kingdom; in every camp where men are aggregated together in large numbers, with sanitary arrangements more or less temporary in character, steps should be taken to obviate the danger. The two main points to be kept in view are: (1) the removal of all rubbish, decomposing organic matter of any kind, and especially of excreta, from the immediate neighbourhood of the house or camp; and (2) the extermination, as far as may be possible, of flies of all kinds. With regard to the first consideration, in towns and places having a sewerage system there is no difficulty as regards immediate and complete removal of excreta and liquid refuse. Solid organic house refuse, which cannot be thrown into the drain, must be kept in covered receptacles and removed at frequent intervals. This is done by the local authority. Nevertheless, accumulations of manure and refuse heaps do exist, often uncovered, and are allowed to lie for days, forming breeding grounds for flies. Flies will not be attracted to a place, either indoors or out of doors, unless they find something to feed on. Of course, all articles of food likely to attract flies should be kept covered up, or within a properly protected and ventilated safe. The second point, the extermination of flies, presents several difficulties; but the principle to go upon is that of *obsta principiis*. The killing of adult flies, even in thousands, will not be sufficient; one must search for and destroy the eggs. If the campaign is taken in hand early enough in the season, flies that have survived from last year will also be dealt with.

The valuable reports issued by the medical officer to the Local Government Board during recent years should be in every hand, for all are interested in the matter of disease propagation by flies. Special reference may be made to Mr. J. P. Jepson's report on the breeding of the house-fly during the winter (New Series, No. 5; also Nos. 85 and 102 by Dr. S. M. Copeman); reports by several observers on the distribution of bacteria by artificially infected flies (Nos. 40, 53, and 66); and the reports on the range of flight of flies (Nos. 53 and 85). Professor A. E. Shipley states that house-flies usually begin to breed in June and July, and continue until October, being most active in August and September; but in warm stables or kitchens they may breed all the year round. The whole development of the fly, from egg to imago, may take place in nine or ten days; the second generation may lay eggs ten days later. We hope that the interesting Anti-fly Exhibition now being held at the Zoological Gardens, Regent's Park, London, a brief account of which appears elsewhere, will be visited by many responsible members of the public, who will thus be able to appreciate the measure of risk which a community runs through the evil-doing of flies, and will be prepared to second the efforts of our sanitarians to fight a very numerous and determined foe.

Annotations.

"Ne quid nimis."

THE IMMATURE SPIRITS (RESTRICTION) BILL AND MEDICINES.

As reported in our Parliamentary columns last week, the Chancellor of the Exchequer (Mr. Lloyd George) agreed to exempt rectified spirits used for the compounding of medicines from the provisions of this Bill. Representations on the subject were made by Mr. Glyn-Jones, M.P., Parliamentary Secretary of the Pharmaceutical Society of Great Britain, Mr. W. J. Uglow Woolcock, Secretary and Registrar of that Society, and Dr. Alfred Cox, Medical Secretary of the British Medical Association. As Mr. Glyn-Jones pointed out in Parliament, if medical men, pharmacists, and hospitals were not to be allowed to obtain rectified spirit by a prohibition clause in the Bill the position would become serious. The Pharmaceutical Society at once realised the situation, and urged that it is vital to the preparation of medicines that rectified spirits of wine should be available for use by registered medical men, hospitals, and pharmacists for the making of preparations of the British Pharmacopœia. In the recently published (1914) edition of the Pharmacopœia there are 427 preparations, and of these rectified spirit is a necessary ingredient in 263. Further, as the law stands it is absolutely illegal for anybody to make these preparations with anything but rectified spirits of wine. Subsequently general resolutions were passed, but the remissions did not appear because, as Mr. Lloyd George explained, it was not necessary to have a resolution for that purpose, all these matters, he added, being dealt with after the "charging resolution" had been adopted. Mr. Glyn-Jones was anxious that this matter should be made quite clear when the general provisions of the Bill were discussed, for as the resolutions stood they included all spirits. Mr. Lloyd George stated that it was the intention of the Government to exempt from these particular taxes the spirits used in medicine. The medical and pharmaceutical authorities, who strongly appealed for the exemption of spirit employed for medicinal purposes from the provisions of the Bill, have done excellent service to medicine by preserving the efficiency of dispensing practice in the directions indicated.

EGYPTIAN OBSTETRICS AS ILLUSTRATED BY A GREEK INSCRIPTION.

It is popularly believed that the process of child-birth among primitive peoples is a simple and comparatively painless one. There are signs that this is so, for some of the West African women at the present time make no ado whatever during parturition, all the circumstances being normal. But a difficult labour is a different matter, and if the assistance of a native doctor is called in the fate of the mother may be a terrible one. Where the knowledge of anatomy and medicine is very small the sufferings at complicated childbirth have always been terrible, and for many centuries they were just as great in Egypt and Greece, the most civilised countries of their day, as in the backward parts of Asia and Africa at the present time. A Greek inscription recently found in Egypt clearly illustrates this sad fact in the history of civilisation. It has been published by Professor G. Arvanitakis in the *Bulletin* of the Archæological Society of Alexandria, whose edition of the text may be thus rendered into English. "Who is the dead one? Herois. How and where? Having a tumour (ὄγχος) in the stomach. And, notwithstanding that we placed a weight (in the form) of Isis; the mother was lost very quickly, and then the child also. What was her age? Eighteen. So Herois was in the flower of her age. Oh, the unfortunate one. May Osiris render her ashes light and grant her sweet water." The story told in this record is one which, it is to be feared, was of frequent occurrence about the commencement of our era. Herois's first accouchement had arrived, and the doctor, or midwife, acting as attendant, finding the delivery delayed, proceeded by mechanical means to accelerate matters. He took a weight made in the form of a figure of Isis, a presiding deity on such occasions, and either placed it upon the mother's abdomen or, as is more probable, attached it by a cord to the already projecting part of the infant. In this case the mother would have been placed in a sitting posture, resting upon two stools, or standing erect. The erroneous practice in the case referred to produced the delivery of the child, doubtless injured, for it died shortly after the mother. The word translated tumour is ὄγχος, which Galen uses solely with that meaning.

PANCREATIC INFANTILISM.

"The characters of pancreatic infantilism are: arrested bodily and arrested sexual development; intelligence good, no mental defect; no deformity or structural defects of the bones; no visceral disease or derangement except chronic diarrhœa, flatulent distension of the abdomen, and defective or arrested pancreatic secretion. The defective or arrested pancreatic secretion is probably due to chronic pancreatitis. In some cases the condition (chronic diarrhœa and infantilism) is completely cured by the administration of pancreatic extract and by that treatment alone." In these words Dr. Byrom Bramwell defines the condition to which he draws attention in the *Edinburgh Medical Journal* for May. It appears to be extremely rare, although cases of arrested development associated with, and apparently due to, chronic diarrhœa are not so uncommon, but in these cases there is usually no evidence of defective pancreatic secretion. Dr. Bramwell records details of his case, which has been under observation off and on for 14 years, and has done excellently on pancreatic extract. He notes from the literature also four other cases, in all of which pancreatic extract gave most satisfactory results. It appears that there is also a type of disease, termed intestinal infantilism (Herter), which may simulate this pancreatic type, but in these cases there may be associated conditions such as anæmia and splenic enlargement, whilst in one case referred to there were gastric dilatation and severe gastric tetany. The indication of the true pancreatic infantilism appears to be found not only from careful tests, of which Sahli's appears to be particularly favoured by Dr. Bramwell, but apparently also by observing the effect of pancreatic treatment.

ATMOSPHERIC POLLUTION: INVESTIGATIONS IN MANCHESTER.

WE have received a copy of the first annual report of the Air Pollution Advisory Board of the Manchester City Council, from which it appears that the question is going to receive promptly a very thoroughgoing investigation in that city. In fact, the work of this board represents a very spirited attempt to deal with the problems of smoke abatement on new lines. In the monthly reports published in THE LANCET of investigations on the nature and amount of soot-fall those made by the authorities at Manchester have already been recorded, but their inquiries are about to be extended. Thus, in addition to soot-fall observations, actinometric and photometric methods have been tried, and also an air-filter. Systematic observations have been made by the use of (1) an iodine actinometer; (2) a photographic recording actinometer; and (3) a photometer for measuring daylight. Reference is made in the report to the soot-gauge returns published in THE LANCET. "They prove," the report states, "that for the month of October the total air pollution is less at Manchester than at Oldham, Birmingham, London, Sheffield, and Bolton, Oldham being much the dirtiest place. All of them contrast most unfavourably with Malvern, Oldham having about 28 times as much soot and tar as Malvern." The comparison in regard to Manchester and London is based on the results obtained at the Embankment station of the latter city, which has nearly always shown a much worse state of affairs than the other seven London stations. This evil condition is probably due to smoke from the river and railways. The comparison is hardly a fair one to use, therefore, in a broad generalisation. We are glad to see the progress that is being made towards carrying out systematic and scientific investigation of the atmospheric pollution created by smoke, and it is to be hoped that Manchester's fine example will be followed by other cities and towns. We are particularly gratified at the success of the movement since we took a large and active share in initiating it, and have from the beginning published the returns made in the monthly records.

THE CAUSATION OF GINGIVITIS.

GINGIVITIS, or inflammation of the gums, is most familiar in its chronic form, pyorrhœa alveolaris. Since attention was first directed to it the number of general medical and even surgical conditions which are held to claim oral sepsis as a leading etiological factor is very large; it appears to share with the large intestine the unenviable reputation of being a sort of slow poisoner through the machinations of the organisms it harbours. But whilst conditions in the colon can with difficulty be accurately investigated, the mouth affords readier access for this purpose, and sufficient facts have been adduced, we think, to make the physician very willing to seek the aid of the odontologist when faced with certain chronic conditions of probable infective origin. We know that the orthopædic surgeon has already appreciated the significance of oral sepsis in its relation to some arthritic states. It is probable, however, that, in turn, the physician may help the dentist, and this more especially in coming to a decision as to what is, after all, the essential problem—namely, the cause of the pyorrhœa. He may do so in two ways. First, gingivitis is a recognised sequela or symptom in certain general diseases. Some cases of secondary anæmia, for instance, lead to pyorrhœa by inducing an anæmic and flabby condition of the gums, and predisposing in this way to the entrance of organisms. In many cases of leukæmia gingivitis occurs; in measles similarly. Lead poisoning in its less marked forms may give a key to the true cause of an inflammatory or unhealthy condition of the gums, even in absence of the characteristic blue line. Scurvy, too, a primary blood condition, leads to changes in the gums. Secondly, it seems possible that gingivitis may follow dietetic errors. A recognition of such possible causes of lowered vitality, either general or local, is of much value. Generalised periodontal disease begins in a marginal gingivitis, and many dental pathologists consider that the latter condition is due to the formation of stagnant areas around the teeth. Dr. R. Ackerley, in an interesting communication,[1] considers that the main factors in producing the gingivitis are: (1) a chronic hyperæmia due to the habit of taking food and drink hotter than the body; (2) a chronic congestion of the mouth, throat, and nose due to hyperæmia of the stomach from overfeeding and too frequent feeding; and (3) the effect on the mucous membrane of the oro-pharynx of moist, warm, unwholesome, microbe-laden air. He states that he has seen several patients with considerable chronic gingivitis who were not mouth-breathers and who kept their teeth scrupulously clean, but who, on the other hand, were addicted to taking hot drinks. With the abandonment of the hot drinks he has found a marked improvement in the condition of the mouth. These observations emphasise the importance of the influences which certain foods, and the manner of eating them, exert upon the gums. Dryness of the mouth, induced by mouth breathing, leads to lowered vitality, as does also the sustained, chronic congestion of the gums caused by frequent drinking of too hot fluids, either in infancy or even in adults. In the former, such congestion may itself lead to mouth breathing. Of benefit are foods which demand considerable "gum exercise" or the act of sucking. Fat mixed with carbohydrates is to be deprecated because it makes a slimy film over the teeth, preventing efficient chewing. These are only some of the suggestions which a study of the mechanical value of certain foodstuffs offers. It would be of interest to follow up the possibilities of the effect of diet upon the gums. It is possible that a reversion to simpler fare or simpler cooking in certain directions may be found to result in general improvement in health, due not only to its effect upon the lower alimentary tract, but also to its improvement of the condition of the gums.

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[1] Proceedings of the Royal Society of Medicine, Odontological Section, vol. viii., No. 2.

THE SPECIFIC GRAVITY OF THE HUMAN BODY.

THE specific gravity of the fluids and tissues of the body is one of the commonplaces of physiological data. The specific gravity of the body as a whole, important though it is in connexion with the power of the human body to float in water, is one which has received less attention, at any rate, in recent years. An interesting paper by Dr. C. D. Spivak, of Denver, dealing with this subject was published in a recent issue of the *Archives of Internal Medicine.* The earliest record of observations on the specific gravity of the human body which Dr. Spivak has been able to discover is that by John Robertson, librarian of the Royal Society, published in the Philosophical Transactions of 1814. Mr. Robertson undertook his experiments from the desire to know what quantity of timber would suffice to keep a man afloat in water, on the supposition that most men were heavier than river water. But his experiments showed that all the men he examined, except the first one, were lighter than an equal bulk of fresh water. Dr. Spivak has employed an ingeniously constructed tank with a gauge graduated in centimetres and millimetres to read off the level of the water within it. The individual to be examined enters the tank, and the level of the water is read before and after the immersion. The gauge was carefully calibrated in regard to the level of the water within it; the weight of water displaced by the individual could thus be determined easily. Dr. Spivak has also employed his method to determine the weight of the different parts of the body, reading off the level when the individual is immersed to the knees, to the arch of the pubic bone, and so on. In the case of a gain in weight he is therefore able to determine to what part of the body the gain has accrued. Dr. Spivak has taken the volumetric measurements of 14 individuals—namely, 4 adults, 3 males and 1 female, and 10 boys. The ages ranged from 53 years to 8 years, the weights from 79 to 26 kilogrammes, and the heights from 1·71 to 1·35 metres. All the measurements were taken at 7 P.M. before the evening meal. The specific gravity of the entire body varied between 0·976 and 1·049. The average specific gravity of the adults was 1·003 and of the boys 1·006, the average of all the individuals examined being 1·005. The other observations on record are according to Dr. Spivak either too low, such as those of Robertson, 0·8706; Suelzer, 0·970; Herman, 0·920; or too high, such as those of Krause, 1·055; Ziegelroth, 1·055; Miess, 1·012; Meeh, 1·012. Dr. Spivak maintains that his tank being of smaller diameter than any of the vessels hitherto used, is designed to get more accurate results than those of his predecessors. The difficulty introduced by the amount of air in the lungs is discussed by Dr. Spivak, together with the means of overcoming it.

THE NATIONAL INSURANCE ACT: THE REDUCTION OF CAPITATION FEES.

THE proposed reduction of quarterly advanced payments to practitioners on the panel formed a prominent subject of discussion at a conference at Chesterfield recently, a strong point being made as to the lack of evidence to justify the scale of reduction proposed. It was urged that this amounted to over 40 per cent., whereas the estimates of the Approved Societies with regard to enlistment pointed to an average of 12 per cent. withdrawn from insurance through military service. A resolution was moved and carried, "That this meeting of the Medical Alliance is of opinion that any deduction from the current accounts of doctors, chemists, or institutions exceeding 15 per cent. is more than is warranted by the circumstances, and trusts that where it may be necessary the Commissioners will give instructions for deductions not to exceed 15 per cent." At a meeting of panel practitioners convened by the Brighton members of the Panel Medico-Political Union the same subject was discussed, special stress being laid upon the responsibility of insurance committees for the present position of doubt and difficulty owing to their failure to institute and maintain correct lists. This is the point raised by Mr. C. W. Hogarth at the meeting of the London Panel Committee and commented upon in THE LANCET of May 8th, p. 982. Speaking at Brighton Dr. H. J. Cardale said it was impossible that the whole of the proposed reduction could be due to men joining the army, adding that the registers kept at the Insurance Committees' offices were probably to blame. In comment we would suggest that the framers of the Insurance Acts failed in their estimate of the enormous amount of clerical work and official verification which would be necessary if accurate working of the panel system was to be obtained. Hence the present unsatisfactory situation arising out of the same cause which brought into existence "unallotted funds."

THE EFFECTS OF ANTIMONY.

ANTIMONY is used as an alloy in a large number of articles, such as type, axles for machines, and cases of projectiles, and forms a constituent of certain glazes. From time to time an outcry makes itself heard as to the perils run by the workers in such trades on a par with that against lead poisoning. Professor E. Bertarelli, of Parma University, has lately investigated the hygienic conditions of workers in antimony in the Italian mines (*Il Morgagni*, March 22nd) and was unable to trace any special morbid condition, nor any particular or general form of poisoning amongst them. Although the suspicion might arise that workers in the antimony mines would be specially subject to anæmia, yet investigation showed that it was impossible to assert that the metal had acted in producing it. Neither among the workers in the sulphide were any cases of anæmia found which would suggest that antimony had any specific action in this respect. The trade which *a priori* would be considered most fraught with danger is the manufacture of antimonial glazes, which involves fine pulverisation of the metal or of its oxide or sulphide, as there is great probability of absorption by the skin or buccal mucous membrane. The author, however, found nothing among the workers in such a factory at Leghorn which would lead him to suppose that any poisoning took place. Nor were those forms of anæmia which certain observers have affirmed to be a common result of the absorption of antimony in industrial preparations met with in these workers, even though the most elementary precautions were neglected and the ingestion of small particles of antimonial substances must have been frequent. The conclusion seems to be that if antimony has any effect in causing anæmia or other morbid phenomena among workers it must be extremely slight.

INCOME-TAX RATES FOR THE YEAR 1915–16.

FOLLOWING on the articles in THE LANCET of April 24th and May 1st on "The Medical Man's Income-tax," and of May 15th on "Service Medical Officers and Income-tax," it may be useful to have the several rates of tax in concise form, which we extract from an explanatory article in the *Daily Telegraph* of May 25th:—

	In the £.
Normal Rate	2*s.* 6*d.*
Modified Rates:	
(*a*) Reduced Rates on Small Incomes:	
Incomes exceeding £300 but not exceeding £500	2*s.* 4*d.*
Incomes not exceeding £300	2*s.* 0*d.*
(*b*) Relief for Earned Income:	
Any individual who claims and proves that his total income from all sources does not exceed £2500, and that any part of that income is Earned income, to be entitled to be charged on his Earned income at the following rates, viz.:	
Total income not exceeding £1000	1*s.* 6*d.*
Total income exceeding £1000, but not exceeding £1500	1*s.* 9*d.*
Total income exceeding £1500, but not exceeding £2000	2*s.* 0*d.*
Total income exceeding £2000, but not exceeding £2500	2*s.* 4*d.*

It should be noted that the relief in respect of earned income is required to be claimed at the time a return is made, and in any case before Sept. 30th, 1915. It is supplemental to any relief under paragraph (*a*) above.

PULMONARY TUBERCULOSIS IN THE TROPICS.

IN the tropics it is the infectious disorders that cause the high death-rate among human beings, coloured or white. Van Loghem[1] draws attention to the increasing importance of pulmonary tuberculosis as a cause of death in tropical countries, and particularly in the Dutch Indies. The annual death-rate from phthisis in Amsterdam for the years 1900 to 1904 was 152 per 100,000 living, in London 163. The figures in subtropical and tropical towns are often much larger, as, indeed, is the general death-rate, and Van Loghem quotes the following figures: Havana, 348; Batavia, 409; Rio de Janeiro, 463; Manila, 486; Santiago, 492; Bombay, 635; Tunis, 691; and Singapore, 692, adding that they probably err by being too low rather than too high. The death-rate from phthisis among the whites alone is higher in the Dutch Indies than in Holland; for the years 1908 to 1911 it stood at about 125 per 100,000 living in Holland, whereas in Batavia it was 177, at Semarang 200, and at Surabaya 232. The cattle here are free from bovine tuberculosis, so that there can be no question of the infection of human beings with tubercle bacilli of the bovine variety. Stress is laid upon the fact that these figures only apply to the large centres of population, the coast towns, where the admixture of natives with civilised and tuberculous whites is most thorough. Inland the mortality due to phthisis, and indeed the incidence of any form of tuberculous infection, fall away to almost nothing. The cutaneous tuberculin reaction of von Pirquet, obtained in 92 per cent. of the students at Leyden by Nolen (1911), was obtained in only 3½ per cent. of the inland Javanese inhabitants of Sumatra (Heinemann, 1914), to quote a single instance. Thus, tuberculous infection during childhood is a rarity among natives uncontaminated by contact with a higher civilisation. The result, as Van Loghem points out, is that among such people tuberculosis is an acute infectious disorder very fatal to adults; for they have not been protected, as Europeans have, by a mild attack of tuberculosis during their youth. Heinemann describes tuberculosis as an acute or subacute disease, rarely chronic, among the uncontaminated Javanese, with a great tendency to the production of generalised tuberculosis such as it seen mainly in infants and young children in Europe. So Van Loghem calls out for some method of vaccinating natives against tuberculosis, and for the enforcing of all sanitary and hygienic regulations that tend to prevent the dissemination of tubercle bacilli, as two urgent needs in tropical countries where the native inhabitants are naturally free from tuberculosis.

EMETINE IN THE TREATMENT OF CHOLERA.

Sir Leonard Rogers reports the results of treatment of cholera by this drug in the *Indian Medical Gazette* (1915, vol. l., p. 4). No benefit can be derived from its use, he concludes. It was thought from the good results which follow its administration in amœbic dysentery, occasionally in sprue-like diarrhœa, and also in hæmoptysis and hæmorrhage from the gastro-intestinal tract, that it might be beneficial when there is, as in cholera, extensive loss of fluid through the mucous membrane of the small intestine. During an epidemic of cholera a series of 32 cases was treated with half a grain of emetine night and morning, in addition to intravenous injections of hypertonic solution of saline and potassium permanganate by the mouth. These cases were not selected; they were also compared with 32 similar cases which were taken alternately with the test cases but not treated with the emetine. The observations extended over two months. No benefit could be recorded. The whole mortality of the 64 cases was 12·5 per cent. A comparison of the two groups of cases showed the following features:—

	Emetine.	No emetine.
No pulse on admission	10	15
Blood specific gravity above 1065	8	3
Two or more intravenous salines	10	10
Age over 50	1	1
Deaths	4	4

THE Cavendish lecture of the West London Medico-Chirurgical Society will be delivered on Friday, June 25th, by Professor Arthur Keith, F.R.S., at the West London Hospital.

A SESSIONAL meeting of the Royal Sanitary Institute will be held in the Guildhall, Bristol, on Friday, June 11th, when a discussion will take place at 11 A.M. on "The Coördination of Military and Civil Sanitary Services in War Time," opened by Lieutenant-Colonel D. S. Davies, R.A.M.C. (T.), medical officer of health of the city, and Mr. L. S. McKenzie, A.M.I.C.E., the city engineer of Bristol.

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[1] Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam, 1915, i., 1300.

THE USE OF ATROPINE IN THE TREATMENT OF THOSE SUFFERING FROM THE EFFECTS OF IRRITANT AND OTHER GASES.

BY DOUGLAS V. COW, M.D. CANTAB.,
BEIT MEMORIAL RESEARCH FELLOW.
(*From the Pharmacological Laboratory, Cambridge.*)

MY object in carrying out the series of experiments which form the basis of this communication is not so much to bring to light any new fact (the action of atropine on the bronchioles has been made clear by the experiments of Dixon and Ransom[1]), as to demonstrate in a clear manner the ways in which this drug may relieve the sufferings of those who have been exposed to the action of German gases.

From such information as I have been able to obtain it does not appear that atropine is being used to any extent in the treatment of these cases. I have therefore performed these experiments as rapidly as possible; and whilst taking account of the more obvious and gross changes produced, I have paid no attention to secondary conditions, such as the tension of various gases in the blood, the estimation of which would have taken more time.

From the symptoms produced by these gases it appears that some at any rate are irritant, the result being a condition in which the sufferer has a great difficulty in breathing and in efficiently oxygenating his blood.

Twelve rabbits were arranged in pairs according to their body weight, and were exposed to either chlorine or bromine vapour for periods of 15 minutes. Each pair was exposed to the vapour by enclosing the two rabbits together in a box (20 in. by 15 in. by 15 in.) with a zinc lining and a glass lid. The amount of chlorine given was that produced by adding 20 drops of hydrochloric acid to an excess of bleaching powder; the amount of bromine was such that the lower three inches of the box showed a thick yellow layer, whilst the rest of the space in the box appeared fairly clear.

As soon as the 15 minutes' exposure to the gas was complete the animals were removed to the laboratory (the box in which the gas was given was placed in the open air) and kept in boxes at laboratory temperature throughout the remainder of the experiments.

One animal of each pair was treated with atropine, the other being kept as a control. The dose of atropine given varied between 2·5 and 4 milligrammes, given in three, four, or five separate injections (the first injection in each case was intravenous, the others subcutaneous). In some cases the atropine treatment was started directly the animals were removed from the gas; in other cases the treatment was not commenced until 30, 60, or 120 minutes after removal from the gas.

Two pairs of the animals were also placed in a box through which a stream of oxygen was passed.

The results of the atropine treatment were very marked and agreed qualitatively throughout the series, though the effects were, of course, more obvious in some animals than in others. When removed from the gas the animals were in every case breathing with difficulty—head thrown back, nostrils working convulsively, and nose and mouth wet with inflammatory fluid. The rate of respiration at this stage varied between 92 in the worst case (chlorine) and 20 in the least urgent case (bromine), though in all cases respiration was laboured. The bromine animals were also very drowsy.

The condition became progressively worse; in about 30 minutes after removal from the gas stridor, crepitations, and rhonchi were evident; diminished resonance over the lungs was noted in one pair only (chlorine).

Atropine treatment affected the animals in the following ways:—the animals became more alert, respiration became much easier, less laboured, and more effective, the chest obviously filling and emptying more completely with each respiration than in the controls; the physical signs in the chest disappeared in every case except two, and in these two animals stridor and crepitations disappeared, a few rhonchi only remaining.

A particularly noticeable feature was the fact that of the two pairs which had oxygen treatment the two controls (which received no atropine) did not appear to be in any better case than other controls which received no extra oxygen; indeed, as it happened they were about the worst cases of the whole series.

The improvement in the animals which received oxygen as well as atropine was particularly obvious. After about an hour from the commencement of the treatment they appeared to be practically normal, though in most cases atropine alone seemed quite sufficient to relieve the acute symptoms.

The rate of respiration was not very greatly affected except in one case in which it was very much accelerated (92) before treatment commenced. This animal's breathing gradually came down to 60 half an hour after the first dose of atropine, and thereafter to 54, 52, and 50. The control animal of this pair, whose respiration was 66 on removal from the gas, continued to breathe at an average rate of 55 throughout. The only other case in which the rate of respiration was greatly changed was that of the other atropine and oxygen animal, in which the respiration came down from 22 to 14 per minute, the control in this case (oxygen only) falling only from 26 to 24.

All these animals were killed about five hours after the commencement of the treatment: the post-mortem condition of the lungs of the atropine animals as compared with the controls was most instructive. All the lungs from the atropine animals were normally collapsed (partially collapsed in the worst case), whilst in the case of the controls the lungs remained distended and retained the shape of the thorax like plaster casts after the chest was opened. A certain amount of frothy fluid exuded from the cut bronchi, the amount varying considerably, but always more in the controls than in the atropine animals.

Again the weight of the lungs showed marked differences as between the atropine animals and the controls; the average weight of the lungs from the atropine animals was 6·7 grammes, as against 7·9 grammes in the case of the controls, though the average body weights of the two classes were 1048 and 1036 respectively.

All the lungs floated in water: in three cases they were practically submerged: all these three were from animals which had received no atropine.

It is known from the work of Dixon and Ransom (*supra*) that so long as an animal is under the influence of atropine the bronchioles remain in a condition of maximal dilatation. The means whereby this drug relieves the symptoms, as described above, are sufficiently obvious to need no discussion. It remains, therefore, only to point out that without atropine oxygen inhalation produces little or no amelioration of the symptoms; that atropine treatment should be commenced as soon as possible; and that atropine in such doses as I have used should not be given to men, bearing in mind the fact that herbivorous animals have a peculiar tolerance to atropine.

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[1] Dixon and Ransom: Journal of Physiology, 1912, xlv., 5, 413.

Atropine has the advantage over hyoscine and hyoscyamine in that the stimulant action on the central nervous system is more pronounced and the subsequent depressant action less in evidence than in the case of these other drugs.

ANNUAL REPORT FOR 1913 OF THE REGISTRAR-GENERAL.

IN a leading article in THE LANCET of May 8th we commented generally on the appearance of this report, which is the third of a new series inaugurated in the year of the recent Census. A change of form and of detail in these reports was required in order to give effect to the previously determined substitution of administrative for registration districts throughout England and Wales, the object being to coördinate conflicting areas for statistical as well as for sanitary purposes. The reasons assigned in favour of these and other subsidiary changes are set forth in the official reports for 1909 and 1910. Careful reading of the first volume of this series, which related to 1911, indicated the sufficiency of the precautions adopted for the preservation of continuity with the records of the past. Similar precautions have evidently been observed in preparing the present report. That the national records at Somerset House—essential as they are to due progress in public health—will in future be protected from ill-advised curtailment may reasonably be inferred from the exemplary attitude of the central authority to which reference has already been made.[1]

The present report, like its several predecessors, is the joint production of the Registrar-General and his statistical superintendent. The purely medical portion is contributed by Dr. T. H. C. Stevenson, who has again shown commendable care and skill in the conduct of the work.

We proceed to notice briefly those portions of the report that appear specially important from the view-point of preventive medicine.

Estimates of Population.

Inasmuch as the rate of natural increase of the English population has fallen since 1911, whilst there has been an increased loss of passenger movement, there is reason to believe that the rate of increase experienced in the last intercensal period has not been maintained subsequently. In no year previous to 1911 had a rate of natural increase been recorded so low as that of the last three years. The fall in the death-rate, which for a number of years had sufficed to compensate for the defect in the birth-rate, has now ceased to do so, and it seems likely that a period of definitely lower natural increase than in the recent past has now set in. To some extent this is due to the age constitution of the population. Since 1901, however, owing mainly to increased proportion of old persons among the living, resulting from fall in the birth-rate, the age constitution has become less favourable; and as this change progresses it will increasingly tend to raise the death-rate, and thus to diminish the natural increase. In view of the foregoing considerations it has been decided to frame the population estimates for future years on the natural increase of the living and the net effect of migration—the assumption upon which previous estimates were based having proved faulty. On the assumption of a continued increase, by geometrical progression, at the rate experienced in 1901–10 the population at the middle of 1913 is estimated at 36,919,339, but this number would have been reduced by 310,000 had the estimate been based on the natural increase and the migration returns.

Changes in Natality and Fertility.

Stated in terms of estimated population at all ages and of both sexes, the births registered in 1913 were equal to a rate of 23·9 per 1000, which is in defect of the average rate for the previous decennium by not less than 2·4. With the exception of the rate for the immediately preceding year, it was the lowest on record. Moreover, the provisional figures for 1914 indicate a still further fall of 0·3 per 1000. The birth-rate necessarily varies with the proportion of females living at conceptive ages, and with the proportion of these who are married. The changes in these proportions at the several censuses since 1871 are discussed in the text, and certain of these are specified as influencing the birth-rate, either by increase or by decrease. Among these changes may be noticed (*a*) the increased proportion of women of conceptive ages in the total population, which is a direct consequence of the fall in the birth-rate already recorded; (*b*) the varying proportion of women of fertile ages who are married; and (*c*) the increasing average age of married women under 45 years old. This appears to have been continuous during recent year, and must have contributed to the fall in the birth-rate, inasmuch as fertility is known to decrease with advancing age. As, however, our registers contain no particulars of the age of parents, nothing is known of the fertility of English women at the several ages. It is therefore at present impossible to determine the effect upon the birth-rate of increase in the age of potential mothers. The effect of decreases in the fertility of married women, due in some measure to their greater average age, but largely no doubt to deliberate restriction of child-bearing, is masked to some extent by the net result of other changes in the constitution of the population, so that the fall in the birth-rate cannot be fully accounted for.

Birth-rates in Different Localities.

In view of the impracticability of dealing separately with the statistics of the numerous administrative districts in the country, the Registrar-General in his recent reports has grouped the facts of birth (as well as of mortality) in "four geographical divisions," corresponding respectively to the north, the south, and the midland areas of England and the principality of Wales. The contents and limits of these areas cannot here be given, but they appear in the official reports of the last three years. In the summary tables of each division, the data for urban are distinguished from those of rural districts. Stated in terms of total population the highest birth-rate in 1913 was that of Wales, 26·9 per 1000, whilst the rate in the south of England was only 21·8. Moreover, if London were not included in the south the rate for that division would be lower still. The rate in the midlands was 23·6 and in the north 25·2. When different parts of the country are compared, Wales comes first, followed in order by the north, the midlands, and the south, whatever measure of fertility be employed.

Illegitimacy.

It has long been customary to measure illegitimate fertility by the proportion of illegitimate to total births, but by this method no satisfactory index is afforded of the fertility of unmarried women, which can only be correctly ascertained by comparing the illegitimate births with the number of possible unmarried mothers. The decline of illegitimacy appears to be considerably greater when measured by the latter method than by the former. In 1913 the illegitimate rate was equal to 7·9 per 1000 unmarried and widowed women, aged 15–45 years. Comparing the proportion of illegitimacy in that year with the proportion prevailing in the quinquennium 1876–80, it appears that, if based on the standard of total births, the rate of illegitimacy would seem to have decreased by less than 10 per cent., whereas the reduction will be found to equal 45 per cent. if calculated on the number of single and widowed women in the population. Relatively to unmarried women of these ages, illegitimate births were most numerous in the rural districts and least so in the metropolis. They were also most numerous in Wales and least numerous in the south of England. This is true of each of the three years 1911–13.

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[1] THE LANCET, May 8th, 1915, p. 974.

Mortality in Relation to Sex, Age, and Locality.

The deaths registered in 1913 were in the proportion of 13·7 per 1000 living at all ages and of both sexes, a rate which is 1·2 per 1000 below the average for the preceding decennium. With the exception of that of the two previous years, the mortality in 1913 was the lowest on record. The standardised mortality of males exceeded that of females by 23 per cent. Since 1841–5 the mortality of females has fallen by 39·4 per cent., while that of males has fallen by only 31·5 per cent. The mortality of males is in excess at all ages except in the years of childhood, when mortality is at its minimum. The excess is very unevenly distributed, being large in infancy, negative in childhood, then gradually increasing to a maximum in later middle life, and subsequently declining again with advancing age. Up to the age of 35 for males and of 45 for females the mortality of 1913 was, at each period, only about half that recorded 50 years ago, but after these ages respectively the fall has been comparatively slight. For each of the four geographical divisions the rates of mortality are given in an instructive table. Presuming that the constitution of the population was less favourable to a low mortality in 1913 than in 1901, it is shown that although the effect of standardisation upon London and the smaller urban districts is only slight, the mortality of the county boroughs is increased by that process by 3 per cent., whilst that of the rural districts is diminished by 14 per cent., the contrast between them being thus greatly increased. As in the two preceding years the relative as well as the actual excess of mortality was least in the rural districts, whilst it increased with urbanisation to a maximum in London. Recent evidence therefore confirms the general impression that urban conditions tell more heavily on males than on females. The standardised death-rate of the north exceeds that of other parts of England. That of the principality is intermediate between the north and south, but in early adult life the customary tendency to excess of Welsh mortality over even that of the north of England still asserts itself. This tendency is more marked amongst females in the rural areas. The lowest mortality mostly prevails in the midlands and in the south.

Mortality of Infancy and Early Childhood.

Of the total deaths in 1913 those occurring in the first year of life amounted to 18·9 per cent., and were equal to 108 per 1000 births, a rate below the decennial average by 11 per cent. In different localities the rates varied from 131 in the northern county boroughs to 69 in the southern rural districts. The evil effects of residence in town as compared with the country are shown by the fact that the rate for the rural districts is exceeded by 41 per cent. by that of the county boroughs, but only by 20 per cent. in the case of London. The comparatively small excess in the metropolis indicates how largely the adverse influences of urban surroundings may be avoided. It is a noteworthy fact that the mortality of the County of London—the centre of the largest urban community known—was lower than that of England and Wales in the aggregate. Very remarkable is the geographical distribution of infant mortality; it was highest in the north of England and lowest in the south. Even the rural districts of the north are more destructive to infant life than is London, the excess being much greater in the male sex. It is interesting to extend comparison of infant mortality up to school age—i.e., to the end of the period of exclusively home influence. The range in the second year of life is greater than in the first. It varies from 14·5 in the southern rural districts to 50·8 in the northern county boroughs. The chances of survival in the second year of life in the latter are only slightly greater than those of the first year in the former. The causes of mortality in early life will be referred to later in dealing with the total loss of life from particular diseases. The mortality of illegitimate infants is about double that of the legitimate, the excess being greater among females. The mortality of illegitimate exceeds that of legitimate infants especially in the case of fatal syphilis, the loss of life from which infection is eight times as great among these unfortunates as it is among legitimate infants.

(*To be concluded.*)

THE ANTI-FLY EXHIBITION.

A VERY useful and practical exhibition, the Anti-fly Exhibition, was opened on May 13th at the Gardens of the Zoological Society in Regent's Park. This title is pregnant with the meaning of the exhibition by which it is intended to indicate that flies—the common house-fly among them—are not a mere nuisance but dangerous enemies to the race. Musca domestica, in the cause of ideal hygiene, must be fought with the same implacable determination employed in dealing with the malaria-spreading mosquito.

The Transmission of Infection by Flies.

The danger with which the public is not yet sufficiently familiar is rendered manifest immediately on entering the exhibition. A drawing of the common house-fly is suspended to the wall, well in view, which is so large in scale that the hairy covering of the feet and legs is seen, so that it can be readily realised that moist filth from any dustbin, gully, or midden can be taken up by a moving insect. Later, when partially dried, this filth may drop off perhaps on any foodstuff over which the fly walks, and the insect may have come in contact with the dejecta of a typhoid patient. The fly, moreover, is a very greedy beast, and will vomit undigested food so as to replenish its stomach with other food it prefers. The picture shows how by regurgitation specific germs previously consumed are brought up and ejected on the supplies in unprotected larders, while the insect, emulating the noble Romans of the days of Petronius, quietly proceeds to consume the better fare it has discovered. In this process a large bubble is formed outside the fly's mouth which we see in the drawing. Beneath the revolting and engrossing picture of the fly there is a series of beautiful models of the germs found by Dr. Birmingham in these bubbles coming from flies. These models, magnified to 1500 diameters, show that flies carry the germs of typhoid fever, tuberculosis, cholera, anthrax, and plague. Flies are also believed, on good grounds, to spread ophthalmia, dysentery, and infantile diarrhœa. After feeding on liquid or moist matter contained in excrement, wounds, sputum, decaying meat, fish, or other organic substances, they penetrate our larders and alight on our food. The extent to which disease is spread in this way cannot as yet be estimated, but we need not wait for blood-curdling statistics before deciding that the fly is a dangerous enemy to society.

Preventive and Other Anti-fly Measures.

Both the germs and the processes by which they are spread, so magnified that we can easily see and understand, are now exhibited. No one can plead ignorance after this object-lesson, and we are immediately led to inquire how so evident a danger is to be avoided. Naturally, the first step is to prevent flies from coming into existence. Where this can be done we have the most certain remedy. Therefore we are shown at the exhibition what are the favourite breeding-places for flies. They breed freely in every form of offal. Preserved in spirits, there are shown at the exhibition all sorts of offal and refuse—fishes' heads, putrid shell-fish, and kitchen débris—in which flies have laid their eggs. The first lesson, therefore, is that no moist offal should be allowed to remain near human settlements; it should be burnt, or buried, or transported where it can do less harm, if more radical methods fail.

At the Zoological Gardens there are devices for dealing with stable and farmyard manure, which provide the most extensive breeding-ground for flies. This has been demonstrated by a simple experiment. After flies have laid their eggs on a small heap of stable manure, if it is boxed over with wire gauze so that none of the flies can escape but must remain to multiply at their birthplace, the rapidity of their increase is demonstrated. And when we realise how quickly a plague of flies can be brought about, we only want to learn the methods of remedy to apply them with a will. A manure heap can be converted into a fly-trap with very little trouble. By placing round it at a distance of 12 inches a ring of dry straw the straw will quickly contain the maggots as they wish to pupate, and the straw is burnt every four days so as not to give the chrysalides time to transform themselves into flies. It is not always feasible to dig manure into the ground; it should always be kept dry, or be treated with an insecticide which may be superficially applied, and which will keep flies away, All these measures mean care, watchfulness, and trouble. The sprinkling of poisonous fluids, which can be used not only on manure heaps, but on walls, trees, and roofs, in the clearly indicated parts of premises, is a simple measure. One of the oldest methods of making fly-traps is also one of the best. It is to dip bunches of grass in a mixture of treacle or brown sugar impregnated with some arsenious salt, and hang them up in likely spots, taking care to place them beyond the reach of children. The use of poison, however, always involves some risk, and many will prefer the traps that catch living flies instead of poisoning them. From America we get an ingenious and very simple device called the Minnesota fly-trap. It is an oblong box of wire gauze. One side is bent inwards to form an arch, and at the apex there are several holes big enough to push a pencil through. The box is placed on the ground or on a shelf or table, the arch covering a bait such as a banana. A little room is left so that the fly may pass under the sides of the box and reach the bait. When satiated the fly goes upwards and finds its way through one of the holes into the portion of the box covering the arch. Here it will struggle to get out, but always by flying upwards and sideways and towards the light. It never thinks of going downwards to find the little hole by which it entered. Thus caught, the flies can be killed by dipping the trap into hot water or holding it over fumes of paraffin oil or benzine. This trap is shown at the Anti-fly Exhibition, together with other and more complicated traps. The Minnesota trap is the easiest to carry about and to make.

An Effective Insecticide.

Though war against the common house-fly and blow-flies or bluebottles is the main purpose of this exhibition, the danger of disease spread by insects generally is considered. The fact is illustrated that we have in crude mineral oil a cheap, easily obtainable, and applicable specific. Not only is it used to prevent mosquitoes breeding in stagnant water, but it can be made into an emulsion which will rid us of such pests as fleas. In war perhaps lice are the cause of our principal concern. In Serbia and Montenegro, and we fear in some of the German prisons or internment camps, they are spreading typhus fever. The work done in destroying flies by the English Commission has saved thousands of lives to our gallant allies. Professor H. Maxwell-Lefroy, with the assistance of Dr. Harriette Chick, of the Lister Institute, has issued a small pamphlet of instructions dealing especially with the use of crude oil, and 4000 lb. of crude oil emulsion have been sent to the soldiers at the front Anyone can make the emulsion. Five and a half pints of crude mineral oil with three pounds of soft soap and about half a pint of water will form a jelly that will prove an efficient insecticide. A more delicate preparation is exhibited at the exhibition made with "bottom" oil and Texas fuel oil, but the principle is the same. The vapour of the lighter oil kills insects, and the grease on the skin or in the clothes kills by contact. The soap makes it feasible to mix the emulsion with water and use it for ordinary washing purposes. If some of the emulsion is allowed to dry into the clothes vermin will not approach those who wear clothes thus treated. The same protection is secured by rubbing a little of the emulsion over the skin. During the war this is likely, one would think, to prove a most useful preparation. A few tins holding a grease or jelly that looks like soft soap are not interesting to look at, but when we realise the results that can be obtained by distributing these tins they gather importance in our sight, and the desire to send any quantity of them to the typhus-stricken towns and villages of Serbia and Montenegro, has been expressed by more than one visitor.

Everyone who can spare the time should visit the Anti-fly Exhibition.

Literary Intelligence.—Under the title of "Sanitation in War," the lectures by Major P. S. Lelean, assistant professor of hygiene at the Royal Army Medical College, with an introduction by Sir Alfred Keogh, are announced for publication about June 1st by Messrs. J. and A. Churchill. The subjects dealt with are: Physical Fitness for War, Anti-typhoid Inoculation, The March, Sickness in the Army, The Rôle of Insects in War, Field Conservancy, Medical Organisation and Administration in the Field, and Water and Water-supplies.

ASYLUM REPORTS.

Royal Albert Institution for the Feeble-minded of the Northern Counties (Annual Report for the Year ending June 30th, 1914).—At the time of its establishment, 50 years ago, the Royal Albert was the only institution of its kind in this part of the country, and since its opening it has dealt with no less a number than 3433 feeble-minded persons. It is satisfactory to note that at no time since its foundation has its financial and general position been higher or its prestige greater. Not only from its size and general equipment, but also from the results in educating and training the feeble-minded, the institution is second to none of its kind in the world. Mr. Archibald R. Douglas, the medical superintendent, comments on the passage of the Mental Deficiency Act of 1913, and says that about the future of the Royal Albert and the other kindred institutions there ought to be no doubt. From the fact of possessing a complete equipment of buildings and a full staff of teachers and manual trainers, these establishments are quite prepared and ready to act as training centres. Now is the time for local authorities and boards of guardians who do not wish to provide for their own feeble-minded to apply for accommodation to be reserved for their cases in these institutions. Another very important question for the consideration of the central committee in the near future will be the reception of children above the age of seven years sent by the education authorities.

The aggregate number of patients under treatment during the year was 807, with an average daily number resident of 696. An undesirable preponderance of those admitted have been low-grade and feeble cases. There were 65 discharges and 13 deaths, the death-rate on the average number resident being only 1·87 per cent. The farm colony has been in constant occupation since October last, and has proved itself to be a useful dependency of the institution. For the past year the schools have been conducted on a novel plan, which provides for purely educational work during the first half of the day, the afternoons being devoted to the new industrial occupations which have been already introduced and which were mentioned in the last report. This departure has succeeded beyond the most sanguine expectations and has infused fresh interest into the teaching staff and all concerned. The most important factor in this rearrangement is that it provides employment for the greatest possible number of patients. Already these new industrial occupations are almost self-supporting, since for the most part the receipts from the articles made have defrayed the cost of the materials used. Care has also been bestowed on the provision of simple kindergarten occupations for the large number who are incapable of learning anything more, and who would therefore be otherwise wholly unemployed. The Herbert Storey Industrial Schools and Workshops have been maintained in a high state of efficiency. The committee have added cloth-weaving to the list of trades taught here, and have introduced one of Hall's hand-power looms.

VITAL STATISTICS.

VITAL STATISTICS OF LONDON DURING APRIL, 1915.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the 10 diseases specified in the table was equal to an annual rate of 6·3 per 1000 of the population, estimated at 4,516,612 persons; in the two preceding months the rates were 7·4 and 6·6 per 1000 respectively. The lowest rates last month were recorded in St. Marylebone, Islington, Holborn, the City of London, and Camberwell; and the highest rates in Stoke Newington, Bethnal Green, Stepney, Greenwich, and Woolwich. The prevalence of scarlet fever showed a further slight decline last month; among the metropolitan boroughs this disease was proportionally most prevalent in Hammersmith, the City of Westminster, Stoke Newington, Stepney, Battersea, Wandsworth, Greenwich, and Woolwich. The Metropolitan Asylums Hospitals contained 2339 scarlet fever patients at the end of last month, against 3609, 2989, and 2514 at the end

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING APRIL, 1915.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1914.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON	**4,516,612**	—	**1144**	**590**	**1**	**62**	**2**	**18**	**229**	**140**	**10**	**2196**	**6·3**	—	**503**	**35**	**50**	**182**	**5**	**66**	**841**	**2·4**	**6776**	**19·6**
West Districts.																								
Paddington	142,055	—	36	25	—	1	1	—	9	1	—	73	6·7	—	12	1	—	6	1	5	25	2·3	211	19·3
Kensington	170,817	—	42	10	—		—	—	3	12	—	68	5·2	—	28	1	1	3	—	2	35	2·7	270	20·5
Hammersmith	124,750	—	38	15	—	1	—	1	9	6	—	70	7·3	—	2	1	—	6	—	2	11	1·1	184	19 0
Fulham	158,849	—	38	21	—	—	—	—	5	2	—	66	5·4	—	37	2	2	6	—	1	48	3·9	231	19·6
Chelsea	63,791	—	11	8	—	4	—	—	—	4	—	27	5·5	—	14	—	—	—	—	1	15	3·1	96	18·6
City of Westminster	152,346	—	59	17	—	—	—	—	6	3	—	85	7·3	—	14	4	—	1	—	3	22	1·9	221	19·9
North Districts.																								
St. Marylebone	112,892	—	17	16	—	2	—	—	6	2	—	43	5·0	—	11	—	1	1	—	1	14	1·6	154	18·2
Hampstead	86,731	—	14	11	—	—	—	1	1	3	—	30	4·5	—	4	1	—	2	—	1	8	1·2	95	15·1
St. Pancras	212,497	—	47	31	—	2	—	—	10	4	1	95	5·8	—	16	1	1	6	—	1	25	1·5	299	18·2
Islington	324,764	—	62	45	—	1	—	2	8	7	3	128	5·1	—	48	5	3	19	1	4	80	3·2	543	21·3
Stoke Newington	50,454	—	19	11	—	1	—	—	3	—	1	35	9·0	—	6	2	—	2	—	1	11	2·8	64	15·7
Hackney	223,724	—	34	20	—	10	—	—	15	11	—	90	5·2	—	16	1	1	4	—	2	24	1·4	288	16·9
Central Districts.																								
Holborn	45,861	—	8	4	—	1	—	—	1	2	—	16	4·5	—	2	—	2	1	—	—	5	1·4	64	18·3
Finsbury	83,212	—	24	7	—	1	—	1	3	2	—	38	6·0	—	6	1	—	11	—	2	20	3·1	135	20·9
City of London	17,129	—	3	2	—	—	—	—	—	—	—	5	3·8	—	—	—	—	—	—	1	1	0·8	35	27·7
East Districts.																								
Shoreditch	108,869	—	24	12	—	—	—	—	10	6	—	52	6 2	—	9	—	3	9	—	1	22	2·6	203	25·1
Bethnal Green	127,662	—	34	34	—	1	—	2	6	3	1	81	8·3	—	17	1	5	6	—	5	34	3·5	209	22·1
Stepney	273,265	—	81	68	1	4	—	1	21	2	1	179	8·5	—	20	1	5	2	—	6	34	1·6	386	19·2
Poplar	160,222	—	39	31	—	1	—	1	12	1	—	85	6 9	—	25	2	5	5	—	7	44	3·6	265	21·4
South Districts.																								
Southwark	186,941	—	40	16	—	9	—	2	17	10	—	94	6·6	—	14	2	6	5	—	1	28	2·0	315	22·1
Bermondsey	124,213	—	25	8	—	2	1	—	8	9	1	54	5·7	—	25	1	—	10	1	5	42	4·4	262	27·4
Lambeth	296,724	—	74	31	—	2	—	3	19	10	—	139	6·1	—	16	3	3	9	1	3	35	1·5	462	19·9
Battersea	167,338	—	52	18	—	3	—	—	4	4	—	81	6·3	—	54	—	1	18	—	4	77	6·0	286	22·5
Wandsworth	338,998	—	106	36	—	4	—	2	12	12	1	173	6·7	—	41	3	4	10	—	2	60	2·3	435	16·8
Camberwell	262,020	—	59	17	—	2	—	—	12	5	—	95	4·7	—	20	—	1	9	—	3	33	1·6	388	19·1
Deptford	109,182	—	27	10	—	3	—	—	10	4	1	55	6·6	—	10	2	2	15	1	1	31	3·7	160	18·9
Greenwich	96,037	—	40	13	—	1	—	1	4	7	—	66	9·0	—	7	—	—	8	—	—	15	2·0	161	21·5
Lewisham	172,433	—	35	25	—	2	—	1	7	2	—	72	5·4	—	15	—	1	5	—	1	22	1·7	172	12·8
Woolwich...	122,836	—	56	28	—	3	—	—	8	6	—	101	10·7	—	14	—	3	3	—	—	20	2·1	182	19·8
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

† The death-rates are corrected for variations in sex and age constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

of the three preceding months; the weekly admissions averaged 272, against 317, 324, and 278 in the three preceding months. Diphtheria also was slightly less prevalent than in the preceding month; the greatest proportional prevalence of this disease was recorded in Paddington, Stoke Newington, Bethnal Green, Stepney, Poplar, and Woolwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1621, 1562, and 1362 at the end of the three preceding months, had further declined to 1223 at the end of last month; the weekly admissions averaged 136, against 160, 172, and 142 in the three preceding months. Enteric fever was less prevalent than in other recent months; this disease was proportionally most prevalent last month in Chelsea, Hampstead, Southwark, Deptford, and Woolwich. The Metropolitan Asylums Hospitals contained 60 enteric fever patients at the end of last month, against 50, 64, and 46 at the end of the three preceding months; the weekly admissions averaged 13, against 13 and 8 in the two preceding months. Erysipelas was proportionally most prevalent in Paddington, Hammersmith, Hackney, Shoreditch, Stepney, Poplar, Southwark, and Deptford. The 18 cases of puerperal fever notified during the month included 3 in Lambeth, and 2 each in Islington, Bethnal Green, Southwark, and Wandsworth. The cases of cerebro-spinal meningitis numbered 140, this disease being proportionally most prevalent in Kensington, Chelsea, Shoreditch, Southwark, Bermondsey, and Greenwich. The 10 cases of poliomyelitis included 3 in Islington.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex and age constitution of the populations of the several boroughs. During the five weeks ending May 1st the deaths of 6776 London residents were registered, equal to an annual rate of 19·6 per 1000; in the three preceding months the rates were 19·6, 20·7, and 21·2 per 1000 respectively. The death-rates last month ranged from 12·8 in Lewisham, 15·1 in Hampstead, 15·7 in Stoke Newington, 16·8 in Wandsworth, and 16·9 in Hackney, to 22·1 in Bethnal Green and in Southwark, 22·5 in Battersea, 25·1 in Shoreditch, 27·4 in Bermondsey, and 27·7 in the City of London. The 6776 deaths from all causes included 841 which were referred to the principal infectious diseases; of these, 503 resulted from measles, 35 from scarlet fever, 50 from diphtheria, 182 from whooping-cough, 5 from enteric fever, and 66 from diarrhœa and enteritis among children under 2 years of age. The lowest death-rates from these diseases in the aggregate were recorded in Hammersmith, Hampstead, St. Pancras, Hackney, Holborn, and the City of London, and the highest rates in Fulham, Islington, Bethnal Green, Poplar, Bermondsey, Battersea, and Deptford. The 503 deaths from measles were 317 in excess of the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Kensington, Fulham, Chelsea, Islington, Poplar, Bermondsey, and Battersea. The 35 fatal cases of scarlet fever were 22 above the corrected average number, and included 5 in Islington, 4 in the City of Westminster, 3 in Lambeth, 3 in Wandsworth, and 2 each in Fulham, Stoke Newington, Poplar, Southwark, and Deptford. The 50 deaths from diphtheria were 17 in excess of the corrected average; this disease was proportionally most fatal in Holborn, Shoreditch, Bethal Green, Poplar, and Southwark. The 182 deaths from whooping-cough were 53 above the corrected average; the highest death-rates from this disease were recorded in Finsbury, Shoreditch, Bermondsey, Battersea, Deptford, and Greenwich. The 5 deaths from enteric fever were 3 below the corrected average number, and belonged respectively to Paddington, Islington, Bermondsey, Lambeth, and Deptford. The mortality from diarrhœa and enteritis among children under 2 years of age was proportionally greatest in Paddington, Finsbury, Bethnal Green, Stepney, Poplar, Bermondsey, and Battersea. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases, excluding diarrhœa, was 110 per cent. above the average.

RATS AND THE PORT OF LONDON.—The number of rats caught at the docks and on vessels arriving at the Port of London in 1914 was 42,916. Of these, 2716 were subjected to bacteriological examination, but in no case was there any evidence of plague.

THE SUCCESS OF THE PROBATION ACT.—Mr. R. Wallace, K.C., in binding over a prisoner at the London Sessions on May 20th, said that over 90 per cent. of the prisoners bound over under the Probation Act never saw the inside of a police-court again, a satisfactory result on grounds both of morality and of finance.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeon: R. T. Gilmour to the *Vivid*, additional, for disposal. Staff-Surgeons: C. R. Rickard to the *Topaze;* A. H. S. Richardson to the *Skirmisher;* A. La T. Darley and J. C. Bringan to the *Victory;* P. L. Crosbie and J. J. H. Rooney to the *Pembroke;* and A. C. W. Newport to the *Vivid*. Surgeons: J. P. Berry (Reserve) to the *Victory;* H. E. Perkins to the *Pembroke;* and G. B. Cockrem to the *Vivid*. Temporary Surgeons: T. M. Wood-Robinson to the *Black Prince;* W. Whitfield to the *Conqueror;* W. A. Bailey to the *Monarch;* A. T. R. Wollaston to the *Agincourt;* R. H. H. Newton to the *King George V.;* E. D. Granger to the *Centurion;* J. G. Nicholson to the *Albemarle;* H. Wilks to the *St. George;* A. H. Wear to the *Ajax;* G. M. Heiron to the *Africa;* and H. B. Padwick and J. Paxton to Haslar Hospital.

ROYAL ARMY MEDICAL CORPS.

The undermentioned are granted temporary rank whilst serving at the Edmonton War Hospital:—Dated April 20th: Lieutenant-Colonel: Spencer Mort. Major: William Benjamin Batchelor Taylor, Henry Martin Rashbrook, and David Morgan Hughes.

George Arthur Wright (late Lieutenant-Colonel, Royal Army Medical Corps, Territorial Force) to be temporary Lieutenant-Colonel whilst serving at the Military Hospital, Whalley (dated May 5th).

The undermentioned temporary Lieutenants to be temporary Captains:—Dated May 26th: Norman Black, late Captain, Singapore Volunteer Corps; and John Paton, late Captain, Royal Army Medical Corps, Territorial Force.

Captain John A. Hayward, having ceased duty with the British Red Cross Hospital, Netley, relinquishes his temporary commission (dated May 12th).

Edgar William Willett, late Surgeon-Captain, Volunteer Medical Staff Corps, to be temporary Captain (dated April 27th).

Lieutenant Ian Macdonald relinquishes his temporary commission on account of ill-health (dated April 29th).

Lieutenant Frank H. Rae relinquishes his temporary commission (dated April 28th).

To be temporary Lieutenant: Daniel McKinlay Reid (dated April 10th). Temporary Lieutenant Owen Richards to be temporary Captain (dated May 21st).

The undermentioned to be temporary Lieutenants: Dated April 24th: Joseph Henri Napoleon Felix Savy, Henry Adams, Colin George Shearer, James David Mackinnon, Alfred George Brown Duncan, Herbert Hampden Taylor, George Fleming, John Ross, William Fleming Stevenson, Thomas Holmes Scott, George Francis Clegg Walker, William Magner, Joseph Edward Judson, Thomas Battersby Jobson, Joseph Humphrey Jones, Godfrey Douglas Hindley, James Henry Edwin Davis, Thomas Clifford, Valentine Henry Blake, Alfred Reginald Roche, Maurice Gerald McElligott, Denis Victor O'Connor, Robert Bern Tydd Stephenson, John Rhodes Dickson, Sidney James Wareham, and James Johnston Abraham. Dated April 25th: Daniel Owen Twining, Arthur Lawrence Jackson, Everard Cecil Abraham, Wilfred Raffle, and Cedric Roland Denny. Dated April 26th: Edgar Taunton, Richard Harrison, George Todd MacLean, Geoffrey Andrew Bird, David Fleck, Caleb Thomas Hilton, Stanley Elder Humphreys, Williamson Rust Reith, John Sneed Bookless, Charles Forbes Harford, Stephen Veitch Telfer, James Smith, Alexander Cameron Renwick, George Loudon Neil, Gerard Edward Lockyer, John Kean, Robert Thomas Herron, Ernest Edward Frazer, Andrew Crawford, William Reginald Ward Asplen, and Richard Henry George Weston, from 15th (Service) Battalion, The King's (Liverpool Regiment). Dated April 27th: Charles Gordon MacKay, Cecil Claude Cragg, John Newbury Fraser Ferguson, John Menlove Bennion, Arthur Richmond, George McMullan, Alfred MacKenzie Clark, Reginald Frederick Yencken, Aubrey John Colby Tingey, John Roberts Pate, Charles Edwin Price, William Samuel Nason, and George Sefton Miller. Dated May 8th: John Jones. Dated May 21st: Francis Mark Farmer to be temporary honorary Lieutenant.

INDIAN MEDICAL SERVICE.

The services of the undermentioned officers are replaced temporarily at the disposal of His Excellency the Commander-in-Chief in India:—Major E. R. Rost and Major R. D. Saigol. Lieutenant-Colonel Selby Herriot Henderson has been nominated a member of the United Provinces Legislative Council vice Colonel C. C. Manifold, C.B., resigned. Lieutenant-Colonel J. Lloyd Jones, Assay Master, Bombay, has been granted two months' leave.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned Lieutenants are confirmed in their rank:—Arthur C. Bateman, Edmond Robinson, and Charles A. Mason.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st Northumbrian Brigade: Surgeon-Captain Robert A. Nesham to be Surgeon-Major.

1st Scottish General Hospital: The undermentioned to be Lieutenants:—Herbert John Adam Longmore, Douglas Wales Berry, and Cadet Cameron Macdonald Nicol, from Aberdeen University Contingent, Senior Division, Officers Training Corps.

2nd Southern General Hospital: Captain William Cotton is seconded.

1st Western General Hospital: Captain Keith W. Monsarrat is seconded.

South Midland Casualty Clearing Station: Captain James L. Joyce is seconded. Walter Mundy-Cox to be Lieutenant.

3rd London General Hospital: William Francis Bensted Bensted-Smith to be Lieutenant.

1st Southern General Hospital: Captain Albert Lucas to be Major. Major Otto J. Kauffmann to be Lieutenant-Colonel. Christopher Martin to be Captain, whose services will be available on mobilisation. Leonard Kirkby Thomas to be Captain, whose services will be available on mobilisation.

East Anglian Casualty Clearing Station: Richard Vincent Slattery to be Lieutenant.

1st East Anglian Field Ambulance: Lieutenant Laurence Henry Hutchins, from the 3rd East Anglian Field Ambulance, to be Lieutenant.

3rd East Lancashire Field Ambulance: Lieutenant Frank G. Prestwich, from Attached to Units other than Medical Units, to be Lieutenant.

1st Welsh Field Ambulance: Lieutenant John Clarke, from Attached to Units other than Medical Units, to be Lieutenant.

3rd Welsh Field Ambulance: Major John Livingstone, from Attached to Units other than Medical Units, to be Major.

1st Northern General Hospital: James Dunlop Lickley to be Lieutenant.

4th Scottish General Hospital: Willie Whitelaw to be Captain, whose services will be available on mobilisation.

3rd Southern General Hospital: Edward Walton Spencer Rowland to be Captain, whose services will be available on mobilisation.

2nd London Sanitary Company: To be Lieutenants: Arthur Errington Rayner and Lieutenant Arthur H. Savage, from 1st South-Western Mounted Brigade Field Ambulance.

1st London Casualty Clearing Station: Captain William S. Forbes, from the Unattached List for the Territorial Force, to be Captain.

Supernumerary for service with the Officers Training Corps: Temporary Major Archibald M. H. Gray to be Major.

Attached to Units other than Medical Units.—Surgeon-Major James P. S. Ward, from Devonshire Royal Garrison Artillery, to be Major. Captain Norman Maclaren to be Major. Surgeon-Captain Evan J. T. Cory, from the 5th Battalion, The Welsh Regiment, to be Captain. To be Lieutenants: Richard Payne Pollard and Charles Beresford Alexander.

VOLUNTEERS.

1st Cadet Battalion, The King's Royal Rifle Corps: Surgeon-Lieutenant William H. Davis resigns his commission (dated July 23rd, 1914).

DEATHS IN THE SERVICES.

Surgeon-General Arthur James Payne, I.M.S. (retired), on May 21st, at Onslow-gardens, London, in his 89th year. He attained the rank of surgeon-general in 1885.

ROYAL HOSPITAL FOR INCURABLES, DUBLIN.—Mr. G. Jameson Johnston, F.R.C.S.Irel., professor of surgery in the school of the Royal College of Surgeons, and senior surgeon to the Royal City of Dublin Hospital, has been elected consulting surgeon to the Royal Hospital for Incurables, in room of the late Sir John Lentaigne.

CATS AS A CAUSE OF DIPHTHERIA INFECTION.—An outbreak of diphtheria at the Stockwell Orphanage, in which, out of 68 cases, 1 proved fatal, has been traced to some infected cats in the Orphanage. The number of cases was larger among the boys than among the girls, which is accounted for by the fact that the boys, singularly enough, took more interest in the cats.

Correspondence.

"Audi alteram partem."

"CHARCOAL" OR "BINDING" WIRE FOR DRAINAGE TUBES.

To the Editor of THE LANCET.

SIR,—The memorandum on the treatment of the bacterial infections of projectile wounds in THE LANCET of April 24th makes special point of drainage. Rubber tubes which are in general use have been found efficient in civil surgery, whence the need for long-continued drainage has almost vanished; but where free and constant drainage of infected wounds is necessary the rubber tube does not fully meet the need; its imperforate walls permit the exit of fluids through the lumen of the tube only. Occlusion of this sole exit may arise, at the inner end of the tube, where it is liable to be blocked by the wall of the wound itself, by the flattening of the tube from natural pressure of the parts and from bandaging, or by angles which result from bending of the tube within the wound, or from fenestrating and so weakening the tube wall. Were infected wounds always hollow and cyst-like, a rubber tube might effectually drain them; but in the commoner case of irregular wounds whose inner walls fall together the drainage effected by a rubber tube may be but little more than would result from the use of a solid rubber cylinder.

To permit of exit and lavage, and no less of entrance for air and flushing, not only must the opening of the wound be free, but the walls within must be kept from falling together and so suffocating each other. The largest rubber tube which may be introduced can but keep apart those particular portions of the wound walls on which it lies, whilst the more tubes introduced the greater the area of rubber to press upon the raw and so impede both the weeping from it as well as the air getting to it.

Amongst the alternatives to rubber tubes for drainage wire has been suggested, though but little used in the last 20 years. The use of wire in strands or hanks is effective by capillary action, but the use of wire in tubes of open coiled spirals has further advantages. Suitable wire is of soft iron known as "charcoal" or "binding" wire; it is made in all gauges down to as fine as a hair; such gauges as 22–25–27 are suitable for coiling up into tubes; the higher the gauge number the thinner the wire; such wire costs, say, sixpence a pound or less by quantity. Charcoal binding wire has practically no spring; it is very easily bent and retains immediately the given bend. Nothing is used in the manufacture of binding wire which can harm an infected wound. A wire drainage-tube can be made of suitable size, shape, and flexibility on the spot in a couple of minutes, with no more elaborate tool than a lead pencil or a walking-stick, and a wise thumb. The tube of spirally-coiled wire can be bent to the shape of the wound; the gaps between the coils allow free entrance and exit of fluids and air to and from the wounded surfaces.

The gauge of the wire selected, the circumference of the wire tube and the amount of extension given to the spirals regulate the strength and flexibility of the tube. For example, coil two feet of gauge 27 wire round a lead pencil, press the coils up neatly together on the pencil, so forming about half an inch of close wire tube of some 24 coils; withdraw the pencil and extend the tube to six inches, thus producing a tube of which the spirals are about a quarter of an inch apart; bend each of the sharp cut ends into a small closed eye and then turn back the eye itself into the lumen of the tube whence it cannot irritate the wound.

Spiral wire tubes can be rendered to any shape without the angling and occlusion which occur when rubber tubes are bent: such shapes as horse-shoe, squares, discs. The introduction of a wobbly spiral tube into a deep pocket is facilitated by mounting the wire tube upon a length of pliable lead or compo piping; the lead pipe, being bent as desired, is passed down inside the length of the wire tube and the open end of the lead pipe engages the eye at the further end of the wire tube. The extraction of a spiral-coiled tube from a wound may be facilitated by drawing on the end of the wire and at the same time twisting it a little in that direction which will coil the coils more tightly.—I am, Sir, yours faithfully,

Warwick-street, W., May 20th, 1915. FRANCIS H. POTT.

MENTAL TREATMENT BILL.

To the Editor of THE LANCET.

SIR,—The Early Mental Treatment Bill was "not proceeded with" on the day of its introduction, but I do not know that it has been definitely withdrawn; if not, there are several things in it that need explanation. In the first place, the title is misleading. The Bill does not propose to enact or legalise mental treatment, whether early or late. At first sight I took it to be a Bill to enforce matutinal treatment by Christian Science, and it occurred to me that a shorter and more appropriate title would be "Christians, Awake!" but it appears on perusal to be a Bill for legalising the temporary detention of persons in the early stage of mental disease.

I do not know, and I cannot learn from the text of the Bill, whether "nervous breakdown affecting the mental condition" and "mental breakdown" are intended to mean the same thing, or whether either or both of them mean the same thing as madness, lunacy, or insanity. Insanity was introduced as a euphemism for madness, but it has long gathered about itself the same implications, and is now as forbidding and stigmatising as madness itself. If nervous breakdown or mental breakdown is to be substituted for insanity it will very soon have precisely the same implications as insanity and madness and lunacy; but whether or not it means the same as these terms I think the Bill should make the meaning clear.

That the "mental condition" may be disordered without the disorder amounting to insanity is, or should be, a commonplace among those who treat mental disorders. There are very many mental disorders that are not insane, and such disorders are very frequent. Is this Bill intended to facilitate the treatment of such disorders? If so, it is unnecessary and uncalled for. Persons suffering from them can now legally "obtain residential treatment" without "being certified insane and sent to an asylum or hospital under the Lunacy Acts"—in fact, it would be impossible to certify them.

If, on the other hand, the Bill is intended to legalise the detention of insane persons under formalities less complicated, and safeguards not less assured, than those at present in force, there is much to be said for it; but whether this is or is not the intention should be made clear. No one but a German would lacerate unnecessarily the feelings of the unfortunate, but the intention of an Act of Parliament should be placed out of doubt, even at the cost of hurting people's feelings. If "nervous breakdown," "mental breakdown," and "mental disorder" mean insanity, they should be so defined in the Bill.

It is forgotten, but I think it should be remembered, that until the Lunacy Act, 1890, the procedure for placing a lunatic under control was much simpler and more ready than the procedure under that Act, and that during the 45 years that this simpler procedure was in force not one case of improper detention ever came to light. The Lunacy Act, 1890, was passed under the driving power of the popular feeling aroused by the attempt to place Mrs. Weldon under control as a lunatic. The attempt was not successful. Mrs. Weldon's liberty was not interfered with for one moment, but for the unsuccessful attempt the parties making it were very heavily fined, and some were ruined, by actions at law. That law thus proved its efficacy up to the hilt, and the plain lesson to be drawn from it was that no law could do more. However, in face of the fact that the existing safeguards had proved thoroughly efficient, public opinion demanded additional safeguards, and additional safeguards were enacted. These additional safeguards are not more efficient than the old—they could not be; but they have made the procedure for placing a lunatic under control more cumbrous, and more dilatory, and more difficult than it was before. The consequence has been that, whereas under the old law practically every lunatic whom it was desirable to certify was certified, and received all the benefits of the protective provisions of the law, under the new law a multitude of lunatics who ought to be certified are not certified, but are either at large, to the detriment of themselves, their families, and the public, or are illegally detained, or at least taken charge of, without any formalities or any legal safeguard.

If the opposition to what is miscalled the Early Mental Treatment Bill arises from an apprehension that it would facilitate the detention as lunatics of those who ought not to be so detained, it is misconceived and ill-directed. Its effect would be just the reverse. It is not true, as the memorandum of the Bill asserts, that "such patients can only obtain residential treatment if they are certified as insane and sent to an asylum." It is true that under these conditions only can they legally obtain such treatment, but, as has happened in so many other cases, the excessive stringency of the law has led to its evasion, and such patients do obtain residential treatment in violation of the law.

It is a mistake to suppose, as the memorandum seems to suppose, that nursing homes are deterred, by the need of certification, from receiving cases of mental disease. The ordinary medical and surgical nursing homes constantly do receive such cases, and do not recognise that the patients are certifiably insane until they become unmanageable or objectionable, and then the home is glad to get rid of a case that it is not fitted to undertake. The Bill will not, therefore, facilitate the treatment of such cases in the ordinary medical or surgical nursing home. What it will do is to legalise a half-way house between the free world and the lunatic asylum, a refuge from which many will return to the world without having to pass the portals of that unreasonably dreaded institution.

Anyone who is really concerned for the liberty of the subject, and does not merely cherish it as an obstructive fad, should work heart and soul for the passage of this Bill, and for the excision of the absurd clause which limits its operation to the period of six months after the conclusion of the war.

I am, Sir, yours faithfully,
Parkstone, Dorset, May 17th, 1915. CHAS. A. MERCIER.

THE MEDICAL DEFENCE UNION AND THE NATIONAL INSURANCE COMMISSIONERS.

To the Editor of THE LANCET.

SIR,—I see a letter in your last issue from Dr. A. G. Bateman, of the Medical Defence Union, stating that this body intends to challenge the right in the High Courts to surcharge practitioners who, in the opinion of their colleagues, represented by the panel committees, have prescribed extravagantly and improperly. As a member of the Medical Defence Union I shall strongly oppose any of the funds of that body being used for such a purpose. If Dr. Bateman had had the opportunity, as I have had, of seeing the extraordinary concoctions ordered by certain panel practitioners, the total disregard as to the cost, even when a drug with a similar therapeutic action is much cheaper, and the preference shown by some to drugs that are unknown to the general run of practitioner, and particulars of which are only to be found in advertisements, he would realise that it is absolutely necessary to have a check of some kind. In the insurance area of Bucks three-quarters of the doctors who prescribe are able to keep to the level of sevenpence per prescription, the other quarter are mostly at the eightpenny level and seldom above 1s.

Yet we know that in the London area the cost is much higher, and there is no doubt whatever in my mind that there are many men who are prescribing expensive medicines solely with a view of making the Act unworkable. If they succeed in doing so and have a State Medical Service they will only have themselves to thank for it.

It is sincerely to be hoped that an important body like the Medical Defence Union is not going to be captured by enemies of the Act.

I am, Sir, yours faithfully,
Buckingham, May 24th, 1915. ARTHUR E. LARKING.

DIFFICULT LABOUR AND DENTAL DEFORMITIES.

To the Editor of THE LANCET.

SIR,—I have no wish to enter into a discussion in your columns with Mr. F. Lonnon, but I should like to correct a false impression he conveys in his letter in THE LANCET of May 22nd that subsequent to his interviewing the mother of the patient my attention was attracted to the relationship of difficult labour to dental deformities. My interest in the question was long antecedent to the International Medical Congress. Still further, until Mr. Lonnon's letter appeared I was quite ignorant of the fact that he was working on the subject. I shall be grateful for any help from your readers, and I have no doubt that I shall be able to obtain sufficient material without Mr. Lonnon's help. Incidentally, I may say that in the case to which he has referred the condition was probably due to a developmental defect, and not to injury at birth.

I am, Sir, yours faithfully,
May 25th, 1915. J. F. COLYER.

THE ZEPPELIN THREAT: SURGICAL FIRST AID FOR THE METROPOLIS.

To the Editor of THE LANCET.

SIR,—With regard to the note appearing under this heading in your issue of May 22nd (p. 1104) it is important to remember that the work and organisation of the Committee of the Royal Society of Medicine, in consultation with and with the assistance of the War Office, deals chiefly with the East Coast from Dover to the Wash, and that it takes no responsibility for organisation in the metropolitan area, which is exclusively in the hands of the Commissioner of Police. Your notice suggests that certain steps suggested by the committee have been adopted and arranged for in the metropolis, but we have no knowledge that this has been done.

With regard to the metropolis, the committee has laid before the Commissioner a memorandum of suggestions for the organisation of surgical aid for London, but we have no right to assume that the Commissioner either heeded or adopted these suggestions. It has also provided the Commissioner of Police with a list of hospitals, infirmaries, and dispensaries willing to receive patients, and a map of London indicating the positions of these places, but the list did not include any extemporised emergency centres. Further, it has undertaken, if called upon by New Scotland Yard, to send surgeons, assistants, and anæsthetists to any point in the metropolitan area where their services are required, but only if summoned by the police.

We have no knowledge that copies of the map, which was prepared by Sir Rickman Godlee, Mr. Ernest Clarke, and Dr. H. Moreland McCrea, have been distributed to every police office, or that copies of the map can be supplied on demand.

Would you kindly allow me to add a personal note? You were good enough to say that the organisation has devolved upon myself, but this is only true in the limited sense that as honorary secretary of the committee I have endeavoured to the best of my ability to carry out its instructions. The Executive Committee, consisting of Sir Rickman Godlee, Bart. (chairman), Mr. C. A. Ballance, Mr. A. H. Cheatle, Mr. Ernest Clarke, Mr. E. M. Corner, Dr. J. C. Dunn, Mr. Edmund Owen, Mr. W. H. Clayton-Greene, Mr. G. J. Jenkins, Dr. Moreland McCrea, Mr. J. W. Thomson Walker, has been in every sense of the word a working committee, and has held numerous meetings here and at the private residences of its members, and the detailed work of arranging the list of receiving places, and corresponding with the officials has fallen almost entirely on Sir Rickman Godlee, the chairman of the committee.

I am, Sir, yours faithfully,
J. Y. W. MACALISTER.
Royal Society of Medicine, Wimpole-street, W.,
May 26th, 1915.

BAZETT *v.* THE LONDON INSURANCE COMMITTEE.

To the Editor of THE LANCET.

SIR,—This action was brought as a test action to raise the questions (1) whether "insuperable difficulty," such as the Committee alleges, is a legally justifiable answer—unless there is actual *physical* impossibility, uncontributed to by incompetence, and not merely *moral* impossibility aggravated by slack enforcement of provisions to meet it—to a demand for the carrying out of an Act of Parliament; and (2) whether, if such insuperable difficulties really exist, resignation and not statute-tinkering is not the only honourable course for persons—especially if salaried—to whom impossible duties have been assigned; and to maintain that the breach of agreements on such a plea cannot destroy the right to damages. Under this particular Act it was hoped to establish that no apportionment of money for a year could be an adequate substitute for assignment of patients, but that, if it were the only alternative available, it had to be done by no "pro rata" rule of thumb—as inequitable a method as could well be conceived—but on the same principles of doing the best for patients and equalising the remuneration of doctors as would have guided common-sense persons in the legal distribution; and to claim that, taking the original date without power of alteration, every man then on the panel had his right both to a voice and to a share. Mr. Justice Darling suggested a compromise, which I did not accept, to my personal detriment, because it would have compromised my position as fighting for *principles* for all and not for mere cash for myself.

I was defeated, apparently, on the extraordinary contention, upheld by the judge in spite of my protests, that the doctors' complying with every detail the Committee might choose to demand, although it could not be found either in the Act or the Regulations, was a condition precedent to the obligation of the Committee to carry out the assignment of the doctorless persons, and that at the same time the gross errors in the doctors' lists which the Committee have made by the thousand were of little or no import, though they largely contributed to the difficulty of the assignment. I have succeeded, therefore—if this is left where it stands and where I, unaided, must leave it, I regret to say—only in showing that it is as useless for doctors to invoke the aid of our Courts of Justice as it is for them to trust to the word of honour of Insurance Committees or to the sense of equity of the Commissioners or to the pledges of the Government.

I am, Sir, yours faithfully,

HENRY BAZETT.

St. Mary's-terrace, Paddington, May 21st, 1915.

"DIFFERENTIAL DIAGNOSIS, PRESENTED THROUGH AN ANALYSIS OF CASES."

To the Editor of THE LANCET.

SIR,—In the review of Dr. R. C. Cabot's book with this title, which appears in THE LANCET of May 22nd, attention has been called to the fact that in the first volume the diagnosis is definitely stated at the conclusion of the consideration of each case, but that the same plan is not adopted in the second volume. In Vol. II. the diagnosis is given in the table of contents against the number of the case which appears in the body of the book. This change was made deliberately at the express request of a large number of subscribers to Vol. I., who pointed out that with the diagnosis printed at the end of the case and frequently catching the eye it deprived the reader of the mental training in diagnosis obtained by logical reasoning and led to the solving of the problem with the answer as a basis.

We are, Sir, yours faithfully,

W. B. SAUNDERS COMPANY.

Henrietta-street, W.C., May 21st, 1915.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

THE subscriptions received during the week include a cheque for £250 from the Agent-General for South Australia, on behalf of the South Australian Belgian Relief Fund. The continuance of open-handed support from the Colonies is a most gratifying feature, and accords thoroughly with the noble national spirit which the outlying parts of the Empire have displayed in every regard since the war began.

A handsome donation has been sent by the doctors and pharmacists of the city and county of Cork. The local committee spent a little money in judicious advertisement, and the cheque received amounted to £116 11*s.* 10*d.*

THE WEEK'S SUBSCRIPTIONS.

The subscriptions received by Dr. Des Vœux up to Tuesday evening last, in addition to those previously acknowledged, are as follows:—

	£	*s.*	*d.*
West London Medico-Chirurgical Society, proceeds from sale of tickets for Reception given on behalf of the Fund (per Dr. O. L. Addison, Hon. Sec.)	44	12	10
South Australian Belgian Relief Fund (per the Agent-General for South Australia)...	250	0	0
Dr. A. Graydon	1	1	0
Dr. Barrs (collected by)—			
Dr. Radcliffe	1	1	0
Dr. Robertson	2	2	0
Dr. Spong	5	0	0
Dr. Woodcock	1	1	0
Warrington Division, B.M.A. (per Dr. J. A. Murray, Hon. Sec.)	2	2	0
Dr. C. J. Battle (per)—			
Dr. Morton, Dr. Wright, Dr. Battle, and A N Other	4	4	0
North of England Branch of Fund (per Dr. J. Don and Mr. A. S. Perceval, Hon. Secs.) (eleventh donation, total £516 13*s.* 6*d.*)—			
Dr. A. Fairlie	1	1	0
Dr. W. H. Dickinson	2	0	0
Dr. E. J. Burnett	1	1	0
Dr. H. W. Dixon	0	10	6
Fees for the Examination of Recruits by Members of the Sunderland Division during 1914—			
Dr. D. Allan	11	2	6
Dr. Blair Aitken	10	2	6
Dr. Gordon Bell	4	12	6
Dr. A. E. Legat	6	17	6
Dr. N. F. Rowstron	8	12	6
Dr. J. Chalmers	8	12	6
Dr. A. Campbell	17	0	0
Dr. S. E. Murray	11	10	0
Dr. Pearcey	14	5	0
Dr. R. S. Hubbersty	9	12	6
Dr. Easton	6	2	6
Dr. Renney	19	2	6
Dr. Raw	6	10	0
Dr. Blair	8	0	0
Dr. W. J. Woodburn	2	2	0
Dr. M. O'Brien	1	1	0
South-West Wales Division, B.M.A. (per Dr. D. R. Price, Hon. Sec.)	1	15	0
Dr. E. Hyla Greves (second donation)	5	5	0
West Bromwich Pharmaceutical Association (collected by) (per Mr. J. Rex Allen)—			
Mr. Griffiths, sen.	1	1	0
Mr. Griffiths, jun.	1	1	0
Mr. Withers	0	10	6
Mr. Barnes	0	5	0
Mr. Beattie	0	5	0
Mr. Bourne	0	5	0
Mr. Allen	1	1	0
Folkestone and District Chemists' Association (per Mr. F. C. Jones)	1	1	0
Mr. W. Riley, of Derby (collected by)—			
Mr. Judge	0	5	0
Mr. Evans	0	5	0
Mr. Wright	0	5	0
Mr. J. E. Owen	0	5	0
Newcastle and District Pharmacists' Association (collected by) (per Mr. W. Kerse)—			
Messrs. Wilkinson and Simpson	5	5	0
Messrs. Mawson and Procter	3	3	0
Messrs. Owen and Son	1	1	0
Mr. J. Stableforth Hill	1	1	0
Mr. T. H. Fleming	1	1	0
Mr. R. Wright	1	1	0
Mr. H. J. Bates	1	1	0
Mr. W. Kerse	1	1	0
Mr. H. S. Williamson	1	1	0
Mr. H. W. Noble	1	1	0
Mr. E. H. S. Baker	1	1	0
Mr. John Elliott	1	0	0
Mr. W. Clark	0	10	0
Mr. C. I. Russell	0	10	0
Mr. W. Stephenson	0	10	0
Mr. W. Atkins	0	10	0
Mr. T. M. Rutherford	0	10	6
Mr. J. F. Simpson	0	10	6
Mr. C. E. Layne	0	10	6
Mr. J. Todd	0	10	0
Mr. J. Corrigill	0	10	0
Mr. F. Beattie	0	10	6
Mr. E. G. Power	0	10	0
Mr. R. McClumpha	0	10	6
Mr. F. R. Parker	0	10	0
Mr. J. Kinnis	0	10	0
Mr. W. Kinnis	0	10	0
Mr. J. Elder	0	7	6
Mr. G. Whitehead	0	5	0
Mr. W. J. Smith	0	5	0
Mr. T. Robson	0	5	0
Mr. A. Turnbull	0	5	0
Miss Dunlop	0	5	0
Mr. E. H. Turnbull	0	5	0
Mr. B. Caley	0	5	0
Mr. A. D. Hunter	0	5	0
Mr. Doig	0	5	0
Mr. Poole	0	5	0
Mr. W. Buckley	0	5	0
Mr. R. Ismay	0	5	0
Mr. Weddle	0	2	6
Mr. Padley	0	2	6
Mr. J. White	0	2	6
Mr. H. C. Bailes	0	2	6
A Friend	0	3	0
Dr. J. Gair Johnston*	1	1	0
Cork, City and County of, from Doctors and Pharmacists (total £124 19*s.*, less expenses £8 7*s.* 2*d.* £116 11*s.* 10*d.*)—			
Dr. D. D. Donovan	5	0	0
Dr. A. M. Sandford	5	0	0
Dr. P. T. O'Sullivan	5	0	0
Dr. C. T. Pearson	5	0	0
Dr. J. Cotter	5	0	0
Dr. H. R. Townshend	5	0	0

	£	s.	d.
Dr. Sir Bertram Windle	5	0	0
Dr. James J. Fitzgerald	3	0	0
Dr. R. H. Barter	3	3	0
Dr. M. C. McFetridge	3	3	0
Dr. J. Dunden	3	0	0
Dr. J. J. McMahon	3	0	0
Dr. J. J. Harding	3	0	0
Dr. A. E. Moore	2	2	0
Dr. N. J. Townshend	2	2	0
Dr. R. W. Hodges	2	2	0
Dr. M. Cagney	2	2	0
Dr. E. H. Montgomery	2	2	0
Dr. R. Crosbie	2	2	0
Dr. T. J. O'Meara	2	2	0
Dr. Col. F. McCartie, I.M.S.	2	2	0
Dr. A. E. Dixon	2	0	0
Dr. P. J. Cremen	2	0	0
Dr. T. Gelston Atkins	2	0	0
Dr. P. G. Lee	2	0	0
Dr. R. Barrett	1	1	0
Dr. J. B. Horgan	1	1	0
Dr. T. H. Denny Townshend	1	1	0
Dr. R. R. Leader	1	1	0
Dr. J. O'Connell	1	1	0
Dr. Ashley Cummins	1	1	0
Dr. Robert Cummins	1	1	0
Dr. T. O'Callaghan	1	1	0
Dr. R. P. Byrne	1	1	0
Dr. H. Corby	1	1	0
Dr. J. Guisani	1	1	0
Dr. E. V. Cantillon	1	0	0
Dr. T. D. Barry	1	0	0
Dr. W. F. O'Connor	1	0	0
Dr. C. B. Pearson	1	0	0
Dr. P. J. Cullinane	1	0	0
Dr. P. Fitzgerald	1	0	0
Dr. R. C. Foott	1	0	0
Dr. D. McCarthy	1	0	0
Dr. W. K. Verling	1	0	0
Dr. T. J. O'Donovan	1	0	0
Dr. T. P. Maguire	1	0	0
Dr. J. J. Kearney	1	0	0
Dr. J. J. O'Connor	1	0	0
Dr. D Morrisy	1	0	0
Dr. R. Morgan	1	0	0
Dr. P. J. Hayes	1	0	0
Dr. Col. Nicolls, R.A.M C.	1	0	0
Dr. G Gwynne, Crosshaven	1	0	0
Dr. G Hegarty	1	0	0
Dr. D. F. Hegarty	1	0	0
Mr. E. McSweeney	1	1	0
Messrs. Kiloh and Co.	1	1	0
Mr. Ernest E. Wolfe	1	1	0
Cork Chemical and Drug Co.	1	1	0
Mr. Thomas White	1	0	0
Mr. A. Nelson Cole	1	0	0
Mr. A. R. Lester	1	0	0
Mr. D. Enright	1	0	0
Mr. and Mrs. Wilson	1	0	0
Mr. A. H. Jones	1	0	0
Mr. R. Blair	1	0	0
Mr. W. Yeats	1	0	0
Mr. J. Scher	1	0	0
Dr. Fielding	2	2	0

* This donation was credited last week in error to the Stewartry of Kirkcudbright.

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham-gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Ltd.

THE APPEAL FOR SURGICAL INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge the receipt of surgical instruments kindly contributed by the following donors since the publication of the last list:—

Dr. A. M. Ware, Queen's Gate Gardens; Mr. J. W. McVitie, Hove, Sussex; and Dr. H. J. Starling, Norwich.

Instruments should be sent to the Apothecaries' Hall, Blackfriars, E.C.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Retirements in the Indian Medical Service.

Surgeon-General G. F. A. Harris, I.M.S., the Inspector-General of Civil Hospitals, Bengal, has retired after many years' service in India. His departure means the breaking of another link between the old school of sahibs and the present race of administrators, and he was held in as high esteem by the Indian population as by the European community. Surgeon-General Harris's family has been associated with India since 1749, when his great-grandfather came to India with a medical commission and died in the Hon. Company's service. His own connexion with India has been long and varied. His work in Bengal dates as far back as 1882, with interludes of work in the Central Provinces, the Re-united Provinces, and the Punjab. Many of the improvements in the Calcutta Medical College, of which he was formerly the head, are due to his suggestions, and all the assistant surgeons and sub-assistant surgeons are under a debt to him for his active steps in improving their pay, position, and prospects.

The retirement from the service is also announced of Lieutenant-Colonel R. H. Elliot, I.M.S., the distinguished ophthalmologist.

Victoria Caste and Gosha Hospital, Madras.

The annual report of the hospital has been laid before a general meeting of the governors and disclosed an unsatisfactory financial position, for the budget estimate for the current year showed an estimated deficiency of nearly Rs.6000. The managing committee of the hospital, the Countess of Dufferin Fund Committee, have recently adopted measures with a view of increasing the income and decreasing the expenditure, among others the introduction of a gradual scale of fees according to means of patients in the general wards with an income of Rs.50 or more per mensem.

Small-pox in Darjeeling.

The sanitary authorities at Darjeeling have been recently concerned over sporadic cases of small-pox. Each case was immediately segregated, and fortunately the disease was stamped out before it assumed epidemic proportions.

St. John Ambulance Red Cross Gifts.

The Indian branch of the St. John Ambulance Association has despatched close on £50,000 worth of Red Cross gifts to the hospitals at the various fronts and has received many appreciations from various sources, one of which is quoted here. Lieutenant-Colonel W. G. Pridmore, I.M.S., who is in command of No. 5 Indian General Hospital, Alexandria, writes as follows: "Before I left Karachi with No. 5 Indian General Hospital 50 ten-bed units of Red Cross gifts were handed over to me by your orders. My hospital is now opened out and ready and I have been able to unpack nearly all the St. John Ambulance Association gifts. These gifts have been, and are, most useful. If those who have laboured to make them could sometimes see the delight which the gifts give the wounded men they would be fully repaid for their trouble. On behalf of the wounded who are being and who will be treated in this hospital, I thank you and the kind people who have laboured to provide them most heartily. The articles which have been especially appreciated are mufflers, Balaclava caps, socks, rezais, blankets, and cigarettes."

Military Assistant Surgeons.

The Government of India have sanctioned the following redistribution of senior military assistant surgeons on the old presidential lists: Bengal, lieutenants 14, captains 14; Madras, lieutenants 2, captains 4; Bombay, lieutenants 7, captains 6; total 47. The necessary adjustment in the existing number of senior assistant surgeons in each presidency will be carried out in due course.

The Inspector-General of Civil Hospitals, United Provinces.

His Excellency the Viceroy has selected Lieutenant-Colonel C. Mactaggart, I.M.S., Inspector-General of Prisons, United Provinces, for the appointment of Inspector-General of Civil Hospitals, United Provinces, in succession to Colonel C. C. Manifold, I.M.S.

A Church Missionary Society Officer for France.

Mr. Arthur Neve, of the Church Missionary Society's Hospital, Kashmir, has accepted a post on one of the base hospitals for Indian troops, and has sailed from Bombay to take up his temporary duties. His brother, Dr. Ernest Neve, will remain in charge of the hospital at Srinagar.

April 24th.

The War.

THE CASUALTY LIST.

THE following names of medical officers appear in the casualty lists published since our last issue:—

Killed: Captain F. M. Bingham, King's Own (Royal Lancaster Regiment) 5th T.F.; and Lieutenant G. M. Chapman and Lieutenant G. H. Lunan, both of the R.A.M.C.

Died of Wounds: Major W. P. Dillon, No. 2 Canadian General Hospital; Captain G. C. Glidden (attached 10th Battalion Western Canada Regiment), Canadian Army Medical Corps.

Wounded: Lieutenant W. Kelsey Fry, Lieutenant W. A. Stewart, Lieutenant P. W. James (from gas), Lieutenant A. C. Perry (attached 2nd Battalion Sherwood Foresters—from gas), Lieutenant J. R. Marrack (attached 1st Monmouth Regiment, T.F.), Captain H. F. Panton, Captain E. A. P. Brock (attached 2nd Royal Irish Fusiliers), Lieutenant P. Cagney (attached 2nd Essex Regiment), Lieutenant W. T. Quinlan, Lieutenant D. G. Watson, all of the R.A.M.C.; Captain H. S. Hollis, R.A.M.C. T.F.; Captain F. C. Bell, Major G. S. Mothersill, both of the Canadian Army Medical Corps.

Prisoner: Surgeon-probationer W. W. K. Brown, R.N.V.R.

DEATHS AMONG THE SONS OF MEDICAL MEN.

To the list given in our last issue of the sons of medical men who have fallen in the war must be added Captain P. Beattie-Crozier, only son of Dr. J. Beattie Crozier; Lieutenant R. E. J. Thomson, eldest son of Lieutenant-Colonel S. J. Thomson, C.I.E., I.M.S. (retired); Second Lieutenant T. F. Stocker, R.E., elder son of Surgeon-Major E. G. Stocker, R.E.; Captain H. de B. Riordan, only son of Colonel W. E. Riordan, R.A.M.C. (retired); Lieutenant R. H. Ackerley, eldest son of Dr. R. Ackerley, of Llandindrod Wells; Second Lieutenant Sidney Blair, son of Dr. John Blair, of Wigan; Captain R. C. C. Campbell, son of Colonel R. N. Campbell, C.B., C.I.E., I.M.S. (retired); and Lieutenant E. J. M. Robertson, son of Dr. J. R. S. Robertson, of Hayling Island.

THE PROSTHETIC SURGERY OF WAR IN GERMANY.

A Swiss correspondent writes:—"Professor Stoppany, the Director of the Zürich Dental School, who has just returned from a long stay in Germany, has published an interesting account of the way wounds of the mouth and face are now being treated there. If their condition permits, soldiers suffering from injuries to the mouth or face are conveyed, he says, to Strassburg, where they are treated in a special hospital organised and directed by Professor Römer. After mentioning that a large proportion of the wounds received in the trenches are those of the mouth and jaw, Professor Stoppany proceeds: 'The hospital which exists at Strassburg is the first that has ever been organised in any war for the treatment of wounds of the face and jaw. The staff numbers 55, and all the work (including the cooking), which is done by the wives and daughters of the professors, is performed without fee. The hospital itself is divided into two sections. In the first a dozen dentists examine the teeth of the soldiers, extract, and make plates. This work is carried out at the cost of the military authorities, who adopt the very reasonable point of view that a soldier with defective teeth cannot be thoroughly efficient. The remaining section of the hospital itself comprises two subdivisions—the operating theatre and the department in which are made the prosthetic moulds destined to replace the bones or sections of bone sacrificed in the operation, and the surgical work is entirely done by dentists, most of whom have taken their medical degree. The wounded are photographed and radiographed on their arrival and photographed before departure, and these photographs and radiographs will constitute a collection of the highest scientific interest.'

At the moment when Professor Stoppany left Strassburg more than 200 soldiers were undergoing treatment there, and the results already obtained were almost marvellous.

One other and not the least interesting point: Professor Stoppany is convinced that, contrary to allegations made some months back, no 'dum-dum' bullets have been used against the German troops."

EMPLOYEES OF LOCAL AUTHORITIES AND THE ARMY.

The Local Government Board have addressed a circular letter to the local authorities, dated May 21st, in which they say that in their previous circular of March 11th the necessity was pointed out for economising labour to the greatest extent possible, and, where substitutes are needed, for engaging only men who are not eligible for the army or suited for the special occupations in question. While acknowledging that many local authorities have recognised the importance of applying a similar principle in cases where vacancies arise in offices and employments, cases have come under their notice in which men who are eligible for the army or for the special occupations referred to have been selected to fill such vacancies, although it might have been possible to make some other arrangement. The circular continues:—

> The Board accordingly suggest that, whenever vacancies occur, and it is unlikely that candidates suitable for permanent appointment who are not eligible for the army or for special work in connexion with the war can be obtained, the local authority should consider first whether it would be possible by a rearrangement of duty among other officers to avoid any fresh appointment during the period of the war; and that if this should be found impracticable they should endeavour to secure the services of any retired officer with the requisite experience who might be able and willing to act during that period, or failing this should engage persons temporarily who are not eligible for the army or the special occupations as recommended in the previous circular in the case of substitutes.

It is recognised by the Board that persons so engaged may not always possess the same standard of qualification as would be required in the case of permanent appointments, but it can be made clear to them when engaged that the employment is only temporary, and that permanent appointments made after the war will be subject to all the ordinary conditions.

RED CROSS WORK IN EDINBURGH: A RÉSUMÉ OF MUCH WORK.—At the outbreak of war the Edinburgh Committee of the Red Cross Society recognised the importance of strengthening its organisation. A meeting presided over by the Lord Provost was held in the Council Chambers, when the general committee was reconstituted, and the following seven adjuvant committees were formed, with their respective conveners:

Finance (Councillor John Harrison), hospital accommodation (Professor H. H. Littlejohn), equipment (Mr. H. M. Rush), personnel (Mrs. Maxtone Graham), work parties and clothing (The Dowager Duchess of Abercorn), Samaritan (The Marchioness of Linlithgow), and transport (Sir M. Mitchell Thomson, Bart.). The Lord Provost is now making a further appeal for funds, which are required for general purposes, and particularly in the equipment and maintenance of hospitals, the provision of materials for clothing, and the maintenance of transport for the sick and wounded. In Edinburgh and its immediate vicinity 750 beds have now been provided in hospitals organised and staffed by the Red Cross Society, and these hospitals have been largely equipped by the equipment committee. The donors of the houses converted into hospitals have supplied a considerable part of the equipment and much of the clothing needed. A large number of patients from the front have now passed through these hospitals since the war began, in addition to Territorials. The military—i.e., first line hospitals—are provided in the Edinburgh district, with the exception of the Dalmeny House Hospital, entirely by the War Office, without imposing any burden on subscribers to Red Cross funds. The provision of the auxiliary hospitals is, at the request of the War Office, left to the efforts of the Red Cross Society. The contributions by the committee to the Scottish Hospital at Rouen have hitherto amounted to £400 a month.

The work parties and clothing committee at 42, Frederich-street cut out large quantities of material, and arrange for this being made into garments. At the music hall workers receive gifts of clothing and other articles, and pack and distribute them, and also make garments for which at the moment there is special need. There have been sent abroad in this way to various hospitals 49,000 articles, to hospitals at home over 17,600 articles, and to the navy 1280 articles. This does not include medical stores. The Edinburgh Committee has provided for work abroad nine ambulances, capable of carrying 36 stretcher cases, and has sent to our French allies three motor ambulances for 12 stretcher cases. In addition it has arranged for the transport of the sick and wounded at home. Since the beginning of the war 12,010 patients have been carried by Edinburgh ambulances and motor-cars. 1263 patients have been naval cases, of which 85 were German prisoners, mainly from the *Maintz* and *Blücher*. From the hospital trains over 1500 patients have been taken to hospital, while to auxiliary hospitals 1400 have been conveyed. From the camps in the Edinburgh district 4600 patients have been transferred to hospital. For this work the transport committee has provided four motor ambulances carrying 14 stretcher cases. There have been given for the period of the war three others carrying eight stretcher cases, while 16 motor ambulances, carrying 34 patients, have been lent—a total of 23 motor ambulances, capable of carrying 56 stretcher or lying-down cases at a time. The cost of providing the ambulances and maintaining and altering the plant has been £6072. In addition to this motor-cars to the number of 200 have been lent to the Edinburgh Transport Committee for the purpose of conveying sitting-up cases, as they are termed, to and from hospital.

THE ARMENIAN RED CROSS AND REFUGEE FUND.—An appeal, signed by Lady Henry Somerset, Lady Frederick Cavendish, Viscount Bryce, and the Dean of Manchester, has been issued asking for immediate assistance for the above fund. The appeal states that there are now in the field 10,000 Armenian volunteers fighting with the Russian Army, who have been equipped and maintained by Armenians all over the world at a cost of £6000 per day. It is estimated that there will soon be between 20,000 and 25,000 Armenians in the field, and at present they have no medical man, and there are only five untrained Armenian ladies assisting as nurses. Fifteen medical students from Kieff have gone to their assistance, but there are no Red Cross appliances of any sort, and these are urgently needed.

The civilian population is also sorely in need of medical aid. There are 12.000 Armenian refugees at Sarikamysch alone to be provided for, hundreds of old men, women, and children having tramped there through the snow without shoes or stockings, these articles having been seized by the Turkish soldiers, who in many instances drove the wretched people out as they entered the villages where they were billeted. The Armenian Society, composed of British and American people, is administering the Red Cross and Refugee Fund free of all cost, while the British Consul-General at Moscow is coöperating.

Donations of money may be sent to the honorary treasurer, Mr. H. A. Godson Bohn, at 17, Holland Villas-road, Kensington, or to the honorary secretary, Miss E. J. Robinson, at 35A, Elsham-road, Kensington.

THE RED CROSS IN MONTENEGRO.—Montenegro is being served for military medical purposes by the Montenegrin Red Cross and by two hospitals of 100 beds each established respectively by the British Red Cross and the Russian Red Cross. The Montenegrin Medical Service has now also 24 medical officers and 22 medical students distributed to the hospitals (from 60 to 100 beds) at Cettinje, Rondno, Nikchitch, Kalochine, Podgovitza, and elsewhere. There are army ambulances at various stations. The needs of Montenegro remain very sore, for typhoid fever is rife, and the population has been added to by an influx of refugees from Bosnia and Herzegovina. More medical men are needed who are prepared to offer their services voluntarily, and funds are urgently required. Contributions may be sent to the Duchess of Rutland, 16, Arlington-street, W., or to Lady Parkington, 58, Green-street, Park-lane, W.

The Red Cross ambulances which have been presented by various towns to London are to be reviewed as a fleet in July by Her Majesty the Queen.

THE KING GEORGE HOSPITAL.—This enormous hospital, whose medical, surgical, and special personnel we have already published, was opened without formality on Wednesday last, patients being received in a certain number of wards which had been prepared. An urgent message having been received by the committee that the hospital was, as far as possible, to be made ready for the reception of sick and wounded soldiers by May 26th, the first batch of resident medical officers entered into residence by that date, and the two top floors and the kitchens were placed in working order. The labours of organisation during construction have been considerable, as industrial questions with the workmen have periodically arisen.

As the result of the notice in THE LANCET four of the five microscopes which were wanted for work in the wards have been promised, the donors being Dr. Noel D. Bardswell, Midhurst; Mr. M. C. H. Moberly, Winslow, Bucks; Mr. W. F. Mellersh, Wimpole-street, London, and Mr. F. W. Edwards, Stanstead-road, Forest Hill, S.E.

The department for electro-therapeutic and massage treatment is now under the charge of Dr. T. Grainger Stewart, physician at the Queen-square Hospital for Diseases of the Nervous System.

QUEEN MARY'S CONVALESCENT AUXILIARY HOSPITALS.—Lady Falmouth and Mrs. Gwynne Holford ask us to state that Roehampton House, near London, will shortly be opened as a convalescent hospital for sailors and soldiers who have lost their limbs in the war. Mr. J. Pierpont Morgan also has offered Dover House, almost adjoining, for the use of officers. These houses together are capable of accommodating about 300 cases.

The Queen has consented to the hospitals being named "Queen Mary's Convalescent Auxiliary Hospitals," and has given a donation of £200. The scheme has also gained the patronage of Queen Alexandra, who, in sending a donation of £100, expressed her delight that the subject she had very much at heart was being taken up.

A strong committee has been formed, and the following is the list of the consulting staff: Mr. Thomas Openshaw, Mr. Robert Jones, Mr R. C. Elmslie, Dr. Thos. J. Horder, and Dr. Theodore Thompson. At these hospitals the wounded who are admitted will be cared for until they have learned to use their artificial limbs, and are capable of taking up some employment, when, by working in conjunction with other societies, every effort will be made to fit the men to earn their living. Grants have been made to the hospitals by the National Relief Fund and the Red Cross Society, but a large sum is needed in addition for the equipment and maintenance. Communications and donations should be addressed to Mr. C. H. Kenderdine (marked Auxiliary Hospital), at St. Stephen's House, Westminster, who will be pleased to answer all inquiries.

Vacancies for Medical Officers.—We are asked to state that there are three vacancies for officers in the 2nd Line and two in the 3rd Line, South Wales Mounted Brigade Field Ambulance, the former of which will be going into camp at an early date. Particulars can be obtained from Lieutenant-Colonel Herbert Jones, The Barracks, Hereford.

There are also vacancies for medical officers (carrying commissions as lieutenants R.A.M.C. T.) in the 3rd (Foreign Service) Line 3rd East Anglian Field Ambulance. Enquiries and applications should be addressed to the Officer Commanding, 3/3 East Anglian Field Ambulance, Walthamstow, London, E.

There are also vacancies for five medical officers prepared to serve abroad in the 2nd and 3rd Line Welsh Border Mounted Brigade Field Ambulance. Pay and allowances as in the Regular Army, together with outfit and camp kit grants. Full particulars can be obtained on application to Officer Commanding, 2nd Line Welsh Border Mounted Brigade Field Ambulance, Lambton Park Camp, co. Durham.

Wounded Allies Relief Committee and Serbia.—The Wounded Allies Relief Committee has received a most satisfactory account of the typhus hospital at Kragujevac from Dr. Lauwens, the medical officer in charge, who reports that the building provided by the Serbian Government is spacious, clean, and in all ways suitable; that the unit has received the utmost attention from the Serbian Government; and that the typhus epidemic is already declining, a total of 20,000 cases in March having dropped in April to 12,000. He further relates the safe arrival of the committee's motor ambulance, to be used, at first, for the transport of infectious cases. The committee is shortly dispatching to Serbia, to the Kragujevac Hospital, four R.C.H. touring cars, for the transport of the wounded, and their comparative lightness will be of great advantage on the heavy Serbian roads. The committee also appeals to the British public to supply the Serbian sick and wounded with boots and overcoats. As the typhus epidemic is already on the decline, the Kragujevac unit will shortly be adapted for purely surgical purposes. Dr. Lauwens urgently asks for surgical instruments, dressing materials and bandages, disinfectants, iodine, &c. Gifts in kind should be addressed to the Committee at Sardinia House, Kingsway; money to the honorary treasurer, Mr. T. O. Roberts (manager), London County and Westminster Bank, 217, Strand, W.C.

Military Hospital Accommodation in Aberdeen.—For some time past negotiations have been in progress between the military authorities and the Aberdeen parish council with a view to the transference of Oldmill Poorhouse to the former, to be used at a hospital. The City of Aberdeen Territorial Association has now received instructions from headquarters to take over the Poorhouse, the parish council being allowed a certain period within which to remove the inmates. The Poorhouse was originally licensed to receive 967 patients, but by using sitting-rooms as wards it should be capable of accommodating over 1000 beds. It is calculated that the taking over of the institution will result in a gain to the Scottish General Hospital of some 550 beds.

The British Fire Prevention Committee and the War Emergency.—The following particulars show the work done by the British Fire Prevention Committee (8, Waterloo-place, London, W.) during the first nine months of the war. The committee's special fire-survey force of honorary surveyors have surveyed in detail 500 establishments taken over for war emergency work, including extensive groups of buildings, such as auxiliary military hospitals. In each case the honorary surveyors' reports, which are prepared on special lines and accompanied by sketch plans, serve as a basis for the detailed written reports to the authorities concerned prepared at the committee's London headquarters. A warning service has issued a large number of public "fire warnings" in the form of posters, over 25,000 of which have been issued to auxiliary hospitals at home, in France, in the Mediterranean, and in Egypt, as also translations in French, Flemish, Urdu, and Panjabi. The issue of posters involved not only a careful distribution with directions, but also resulted, as a rule, in correspondence on technical points. Authorities and public corporations receive the posters free upon written application to the registrar of the committee. "Warnings" have also been issued to factories and workshops engaged on Government supplies in respect to air raids. A special fire-service force has been organised by the committee, comprising ex-fire-brigade officers and firemen, and 200 firemen with the necessary appliances are available for mobilisation in sections within 48 hours. Calls upon this force have so far only been made to a moderate extent for fire patrols. The work in each department has been carried out by the honorary officers of the committee and a small clerical staff without materially interfering with the routine work of the organisation. The Committee have recently issued some valuable hints on fires arising from air-raids, and they may be warmly congratulated upon their public service.

Prohibited Exports. — The Privy Council, under its powers to supplement or vary, whilst a state of war exists, and on the recommendation of the Board of Trade, any Proclamation or Order dealing with goods for exportation, has prohibited the exportation to all destinations of crude coal tar, and to all destinations other than to British possessions and protectorates the following drugs and chemicals—magnesium chloride, oxides and salts of cobalt, oxalic acid, phosphorus, and all forms of aluminium.

St. Thomas's Hospital is preparing to enlarge the accommodation there provided for wounded and sick soldiers by 300 extra beds, which are to be placed in huts now under construction.

The Royal Insurance Company, Liverpool, and the Liverpool, London, and Globe Insurance Company have each presented to the Liverpool Civic League a fully equipped motor ambulance for the transport of wounded soldiers to the Liverpool hospitals.

Medical News.

Board of the Royal Colleges of Physicians and Surgeons of Edinburgh and the Royal Faculty of Physicians and Surgeons of Glasgow.—At examinations held recently the following candidates were successful:—

First Examination.—Robert Austin, Joseph Black, Apcar Galustian, Francis Xavier Hayes, Donald Leslie Henderson, Robert Alexander Chermside Pooley, Sidney Hill Waddy, and Robert Wilson.

Second Examination.—Philip George Bainbridge, Alexander Balfour Black, Donald M'Kenzie Black, James Calder, Jean M' Murray Crawford, Robert Phillips Crawford, Reginald Douglas Howat, William Jackson, Reginald John Thomas Malcolm-Gasper, Joseph Michaelson, Patrick Aloysius O'Brien, and Samuel Sloan.

Third Examination.—John Carden Bedwell, William Campbell Borrie (with distinction), Kaikhasru Sorabji Bhiwandiwalla, William Brown, John George Buchanan, Harry Ellison, Owen Glendower Evans, John William Irvine, William Paterson Hay Lightbody, James Young M'Lean, H. Morley, and Charles Edward Stuart Runciman.

Final Examination.—Frederick Arthur Vere Denning (with honours), John Walker, George Thomson, John Mellon Smeaton, Stewart Newnham Toulmin, Wilson Thabo Mongoli Sebeta, Victor Albert Goonetilleke, John Scott, William Pigg Over, and Thomas Ross Scott.

Society of Apothecaries of London.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—C D. Banes (Section II.), King's College Hospital; A. U. L. Bennett (Sections I. and II.), Royal Free Hospital and Birmingham; H. A. De Morgan (Sections I. and II.), Middlesex Hospital; C. S. Dodson (Sections I. and II.), University College Hospital; J. C. Lee (Section I.), McGill, and L. N. Lee (Section II.), Geneva; H. B. Padwick (Sections I. and II.) and M. C. Stark (Section I.), London Hospital; and T. J. Thomas (Section I.), King's College Hospital.

Medicine.—W. Bailey-Thomson (Section II.), Aberdeen; J. A. A. Boddy (Section I.), Manchester; A. Butterfield (Section II.), Durham; W. Fox (Section II.), Charing Cross Hospital; J. C. Lee (Sections I. and II.), McGill; W. F. Matthews (Section I.), King's College Hospital; S. Rawlinson (Sections I. and II.), Manchester; and A. H. Taymour (Sections I. and II.), Guy's Hospital.

Forensic Medicine.—L. M. Arnold, Cambridge and St. Mary's Hospital; A. Z. Abushady, St. George's Hospital; L. S. Goss, Middlesex Hospital; J. C. Lee, McGill; I. H. Lloyd, Westminster Hospital; A. H. Taymour, Guy's Hospital; and T. J. Thomas, King's College Hospital.

Midwifery.—L. M. Arnold, Cambridge and St. Mary's Hospital; A. Butterfield, Durham; F. W. Chamberlain, Middlesex Hospital; K. M. Dyott, London Hospital; and J. C. Lee, McGill.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: C. D. Banes, A. U. L. Bennet, C. S. Dodson, L. N. Lee, H. A. DeMorgan, and H. B. Padwick.

Royal College of Surgeons of Edinburgh.—At a meeting of the College held recently the following gentlemen were admitted Fellows:—John Coffey, L.R.C.S. Edin. (triple qualification), Dublin; Norman Grenville Walshe Davidson, L.R.C.S. Edin. (triple qualification), Wolverhampton; Andrew Graham, L.R.C.S. Edin. (triple qualification), China; Garnet Reginald Halloran, M.B., Ch.M. Univ. Sydney, London; George Laurence, M.R.C.S., L.R.C.P. Lond., Chippenham; Joseph Currie Lorraine, M.B., Ch.B. Edin., Burma; and Vernon Laurie Miller, M.D., C.M. McGill Univ., Halifax, Canada. The bronze medal and microscope presented to the College by Colonel William Lorimer Bathgate, in memory of his late father, William McPhune Bathgate, F.R.C.S. Edin., lecturer on materia medica in the Extra-Academical School, was awarded, after the usual competitive written examination, to Mr. James Hood Neill, Edinburgh.

Royal Medical Benevolent Fund.—At the last meeting of the committee 15 cases were considered and grants amounting to £104 voted to 12 of the applicants. The following is a summary of the cases relieved:—

Daughter, aged 59, of M.R.C.S. Eng. who practised at Liverpool. Until the war broke out managed to earn a living as a teacher of singing, but practically all her teaching work has ceased. Has an invalid brother partly dependent on her. Voted £10 in two instalments.—Widow, aged 52, of M.B. Aberd. who practised at Watlington, Oxon. Left totally unprovided for at her husband's death after a long illness. Has one son who is an invalid. Relatives allow her £5 per month, but this is not sufficient to provide all that is required for herself and son, and applicant unable to work. Voted £10 in two instalments and referred to the Guild.—M.R.C.S. Eng., aged 77, who practised at Manchester and Brighton. Has been in failing health for some years, and is partially blind and suffering from right hemiplegia. Only income the Old Age Pension. Has one daughter, who has had to give up her situation to nurse her father. Voted £18 in 12 instalments, and referred to the Guild.—Daughter, aged 60, of L.R.C.P. Edin., who practised at Cheadle, Cheshire. Health very indifferent and unable to undertake regular employment. Only income £30 per annum. Relieved nine times, £76. Voted £12 in 12 instalments.—Daughter, aged 64, of M.D. St. Andrews who practised at Dover. Has a sister and niece dependent on her. Resides at seaside town and takes in paying guests but recently had difficulty in obtaining them. Relieved once, £10. Voted £10.—Daughter, aged 64, of M.R.C.S. Eng. who practised at Derby. Health very indifferent for many years. Only income £5 per annum from a friend. Lives with a sister who provides her with a home. Relieved five times, £60. Voted £12 in 12 instalments.—Daughter, aged 66, of M.R.C.S. Eng. who practised at Durham. Has been an invalid for years and unable to leave her bed and practically blind. Only income a pension from another charity. Relieved three times, £30. Voted £5.—Wife, aged 49, of M.R.C.S. Eng. Deserted by husband. Has one daughter, who was a governess, but has lost her employment in consequence of the war. Applicant very delicate. Only joint income recently 10*s.* per week. Relieved twice, £14. Voted £12 in 12 instalments.—Widow, aged 68, of M.R.C.S. Eng. who practised in Jamaica. Has three married sons, but none able to help. Only income £26 per annum from another charity. Too old to work. Relieved twice, £20. Voted £12 in 12 instalments and referred to the Guild.

Also three emergency grants of £1 each pending further inquiries. Six additional annuitants at £20 each were also elected, making the total number 148. Subscriptions may be sent to the honorary treasurer, Dr. Samuel West, 11, Chandos-street, Cavendish-square, W.

Mr. Neil McLeod, who died suddenly at his residence, Whitehall, Drighlington, near Bradford, on May 12th, was the medical officer and public vaccinator for the fourth district of the North Bierley union, and had a large local practice.

Parliamentary Intelligence.

HOUSE OF COMMONS.

Thursday, May 13th.

The War and Elementary Education.

Sir Henry Hibbert spoke of the excellent results obtained from the medical inspection of elementary school children. He was afraid that that inspection might have to be stopped or greatly curtailed during the war. In his own county (Lancashire) there was a permanent staff of 13 doctors, of whom 10 had gone to the war, Three of them were serving under the Serbian Government. Two other medical men on their staff were going, and that would leave them with one. They had 26 nurses and 18 had gone. They expected two to go almost any day. He did not see what, could be done in the matter because it was absolutely impossible to engage fresh medical men.

Dr. Addison (Parliamentary Secretary to the Board of Education) said that the Government now contributed a share to the medical inspection of school children, whereas formerly the cost fell upon the local authorities. Many authorities were now working with greatly reduced medical staffs. As to the use of schools for military hospitals, he had been round the country with a committee making provisional arrangements. In Liverpool and other places they visited with the local authorities all available buildings which were anything at all likely to be suitable, and their anxiety was to spare school children from dislocation and disturbance where possible. It had been suggested that chapels should be used for hospitals. A chapel was very seldom a suitable place. A place was wanted where a man lying on a bed could see out of the window and get a glint of sunshine, and it often happened with chapels and halls and such-like buildings that they only had windows high up, so that a man lying on a bed in the middle of the floor would see the light come in from above. Such buildings would not make suitable hospitals. All these considerations had been taken into account, and it was not with any avidity that the Board of Education consented to the use of schools as hospitals. It was found advisable by the Army Council to have a committee on this matter, and make a comprehensive scheme in case great numbers of beds were needed. The various local authorities coöperated with the committee in every way, and it was found quite possible by friendly negotiations in all the great cities visited to arrive at a scheme, and, notwithstanding the criticisms from outside, arrangements were made which he thought would be found to meet the full requirements of the case and cause as little disturbance and friction as possible. Arrangements for 1500 beds could not have been made without disturbing someone.

Mr. Pease, replying to a question relating to physical education, said that the Board of Education had recently had appointed two or three extra inspectors in connexion with physical training, men who had studied the subject and had passed tests in Sweden or elsewhere, to go round the country and see that the best system of physical training was adopted in schools. They were to examine the curriculum of the school and to see that as much attention as possible, having regard to the other interests of the school, was given to physical training and exercise. He believed that more could be done, especially in connexion with the first few minutes of the school day. In many of the schools the first ten minutes were given to breathing exercises and to certain simple exercises in addition to the regular period set apart of from 20 to 40 minutes for physical training. A real advantage would thus be secured by the children. Physical exercise was being made a compulsory subject in all the training colleges.

Wednesday, May 19th.

Consulting Surgeons' Service with the Army.

Mr. Joynson-Hicks asked the Financial Secretary to the War Office whether the following surgeons, Sir G. H. Makins, K.C.B., Sir A. A. Bowlby, C.M.G., Mr. F. F. Burghard, Mr. W. T. Lister, Mr. H. M. W. Gray, and the following physicians, Sir W. P. Herringham, Sir A. E. Wright, Sir J. R. Bradford, and Sir B. Dawson, K.C.V.O., were employed at the front at ordinary Royal Army Medical Corps salaries; and whether he had any difficulty in getting eminent doctors to serve in consulting positions either abroad or at home at the ordinary rates of pay given to the officers of the Royal Army Medical Corps.—Mr. H. Baker replied: The officers named are employed at the front with pay as colonels of the Army Medical Service, and so far there has been no difficulty in obtaining eminent medical men to serve in consulting positions either at home or abroad at the rate of pay offered.

Medical Men and War Service.

Mr. Ginnell asked the President of the Local Government Board to state the number of medical officers of local administrative bodies in England and Wales who had volunteered for service in the present war, the number of them serving, and the treatment of them by those bodies generally in regard to continuance of salary, payment of substitute, and keeping their positions vacant for them.—Mr. Herbert Samuel (in a written reply) answered: The number of medical officers of health serving with the naval or military forces, so far as the Local Government Board know, is 171, and the number of tuberculosis officers and assistant tuberculosis officers so serving is 52. I have no information as to the number of officers who have volunteered but are not serving. A large number of assistant medical officers of health, superintendents of isolation hospitals, Poor-law medical officers, and school medical officers are also serving. Generally speaking, local authorities pay such officers during their absence the difference between their civil pay and their navy or army pay, keep their positions vacant for them, and appoint temporary substitutes where necessary.

Mr. Ginnell asked the Chief Secretary to the Lord Lieutenant a similar question in regard to the medical officers of local administrative bodies in Ireland.—Mr. Birrell furnished the following written reply: About 26 or 27 Poor-law medical officers have been granted leave of absence to join the Army Medical Service. Their positions will be kept open for them. In some cases the guardians are paying the medical officer his salary and also paying the substitute. In others the salary is paid to the temporary substitute only.

Disabled Soldiers.

Replying to Mr. Ellis Griffith, Mr. H. Baker (Financial Secretary to the War Office) wrote: A wounded soldier considered to be permanently unfit for further service is brought before a medical board, and may be discharged from the service before complete convalescence is attained. He can, however, remain in hospital as a free patient until it is considered advisable that he should leave, and during this period he draws any pension or disability pension awarded him. All insured soldiers while suffering from disability are entitled on discharge from the service to full benefit under the National Insurance Act, except that, as provided by the Select Committee on Pensions, sickness and disablement benefits are reduced by 5*s*. a week for men who are drawing the total disability pension at the new rate.

National Insurance Payments to Medical Men.

Mr. Bridgeman asked the Chancellor of the Duchy why it was that medical men were not paid each quarter the full amount due to them under the National Insurance Act; what means doctors had of recovering arrears due to them; and why in the border parishes they received mileage pay on the Welsh side but not on the English side for patients distant more than three miles.—Mr. Montagu wrote in reply: In answer to the first part of the question, the remuneration due to practitioners on the panel under their agreements with Insurance Committees is ascertainable annually and not quarterly. The quarterly payments are advances on account of remuneration which cannot be determined until the close of the year, and no quarterly settlement is therefore practicable. As regards the latter part of the question, the distribution of any mileage grant among the doctors in any particular area is largely a matter for the doctors themselves. If, however, the honourable member has in mind any particular case, I should be pleased to make inquiries.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Boycott, Arthur E., M.D. Oxon., F.R.S., has been appointed Director of the Graham Research Laboratory.

Ewan, J. A., M.D. Edin., has been appointed Temporary County Medical Officer of Health for Kesteven.

Gemmell, A. C., M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Medical Officer to the Red Cross Hospital, Ampton Hall, Bury St. Edmunds.

Jones, Peter, M.D. Edin., has been appointed Medical Officer of Health for the Abergele and Pensarn Urban District.

Kelleher, T. A., M.B., B.Ch. R.U.I., has been appointed Temporary Medical Officer of Health to the Waterford and New Ross Port Sanitary Authority.

Shorland, W., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for Briton Ferry and Baglan Lower.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

Birkenhead Borough Hospital.—Female Senior and Junior House Surgeons. Salary £180 and £150 per annum respectively, with board and laundry.

Birmingham General Dispensary.—Resident Medical Officer, unmarried. Salary £250 per annum, with apartments, attendance, &c.

Bolton Infirmary and Dispensary.—Third House Surgeon. Salary £170 per annum, with apartments, board, and attendance.

Brighton County Borough Isolation Hospital.—Resident Medical Officer. Salary £200 per annum, with board and lodging.

Bristol, Bishop's Knoll Hospital (2nd Southern General Hospital), Stoke Bishop.—Surgeon in Residence. Salary £250 per annum, with board, lodging, and laundry.

Bristol General Hospital.—House Surgeon and Casualty House Surgeon, both for six months. Salary at rate of £150 per annum, with board, residence, &c.

Bristol Royal Infirmary.—Throat, Nose, and Ear House Surgeon for six months. Salary at rate of £120 per annum, with board, apartments, and laundry.

Burnley, Victoria Hospital.—House Surgeon. Salary £135 per annum, with residence, board, and washing.

Bury Infirmary.—Senior and Junior House Surgeons. Salary £175 and £150 per annum respectively, with board, residence, and washing.

Buxton, Derbyshire, Devonshire Hospital.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

Cambridge, Addenbrooke's Hospital.—Honorary Assistant Surgeon for Ear, Nose, and Throat Department. Also Honorary Assistant Surgeon for Ophthalmic Department.

Carlisle Non-Provident Dispensary.—Resident Medical Officer Salary £200 per annum, with apartments (not board).

Carmarthen, Joint Counties Asylum.—Temporary Second Assistant Medical Officer. Salary at rate of £200 per annum, with board, lodging, washing, &c.

Denbigh, North Wales Counties Asylum.—Second Assistant Medical Officer. Salary £300 per annum, with apartments, board, attendance, and washing.

Ealing, Borough of.—Medical Officer of Health and School Medical Officer. Salary £700 per annum.

Edinburgh, Royal Army Medical Corps Depôt, Easter-road Barracks.—3rd Lowland Field Ambulance: Commissions.

Evelina Hospital for Sick Children, Southwark, S.E.—House Physician for five months. Salary at rate of £75 per annum, with board, residence, and washing.

Exeter, Royal Devon and Exeter Hospital.—House Physician for six months Salary at rate of £150 per annum, with board, apartments, and washing.

Great Missenden, Bucks.—3rd/2nd South Midland Mounted Brigade Field Ambulance (T.): Two Medical Officers. Sanitary Section, 2nd/1st South Midland Division: Medical Officer.

Harrogate Infirmary.—Resident House Surgeon. Salary £100 per annum.

Leeds City.—Medical Assistant in Public Health Department. Salary £350 per annum.

Leicester Royal Infirmary.—Resident Medical Officers. Salary as arranged.

Liverpool, Highfield Military Hospital, Knotty Ash.—Resident Assistant Medical Officer. Salary at rate of £300 per annum, with rations and apartments.

Liverpool, Royal Southern Hospital.—Honorary Assistant Laryngologist for Ear, Nose, and Throat Department.

Manchester, County Asylum, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Newcastle-upon-Tyne, Poor-law Institution and Infirmary, Westgate-road.—Assistant Resident Medical Officer, unmarried. Salary at rate of £250 per annum, with apartments, rations, and washing.

Northampton County Borough.—Temporary Clinical Tuberculosis Officer. Salary £350 per annum.

Northumberland, Children's Sanatorium, Stannington.—Female Resident Medical Officer. Salary £200 per annum, with board and washing.

Nottingham Children's Hospital.—Female House Surgeon. Salary at rate of £150 per annum, with apartments, board, and washing.

Paddington Green Children's Hospital, W.—Temporary Surgeon in Charge of Out-patients.

Plymouth, South Devon and East Cornwall Hospital.—House Surgeon. Salary as arranged, with board, residence, and washing.

Rotherham Hospital.—Junior House Surgeon. Salary £125 per annum, with board, lodging, and washing.

Royal Free Hospital, Gray's Inn-road, W.C.—Two Resident Medical Officers to Military Block.

Royal National Orthopædic Hospital, 234, Great Portland-street, W.—Resident Medical Officer.

St. Mary's Hospital for Women and Children, Plaistow, E.—Resident Medical Officer and Assistant Resident Medical Officer. Salary at rate of £110 and £90 per annum respectively, with board, residence, and laundry.

Salisbury General Infirmary.—House Surgeon and Assistant House Surgeon, unmarried. Salary £150 and £100 per annum respectively, with apartments, board, lodging, and washing.

Scarborough Hospital and Dispensary.—Senior and Junior House Surgeons. Salary £100 and £80 per annum respectively, with board, residence, &c.

Sheffield, Ecclesall Bierlow Union.—Resident Assistant Medical Officer. Salary £350 per annum, with board, washing, and apartments.

Sheffield, Jessop Hospital for Women (Gynæcological and Maternity Departments).—Female Junior House Surgeon, unmarried. Salary £80 per annum, with board, residence, and laundry.

Sheffield Royal Infirmary.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.

Sheffield, Wharncliffe War Hospital, Middlewood-road.—Resident Medical Officers.

Shrewsbury, Royal Salop Infirmary.—House Physician. Salary at rate of £110 per annum, with board and apartments.

Sidlaw Sanatorium.—Resident Medical Officer. Salary £200 per annum.

Singapore, Straits Settlements.—Resident Medical Superintendent for Infectious Diseases Hospital. Salary 4200 dollars for first, 4500 dollars for second, and 4800 dollars for third year, with free quarters.

South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Female House Surgeon. Salary £150 per annum, with residence, board, and washing.

Stroud General Hospital.—House Surgeon. Salary £120 per annum, with board, lodging, and washing.

Swansea General and Eye Hospital.—House Physician. Salary £125 per annum, with board, apartments, and washing.

Tingwall, Whiteness, and Weisdale Parish.—Medical Officer and Public Vaccinator. Salary £45 per annum.

Ventnor, Royal National Hospital for Consumption and Diseases of the Chest, Isle of Wight.—Assistant Resident Medical Officer.

Walsall and District Hospital.—Assistant House Surgeon and Anæsthetist. Salary £150 per annum, with board, residence, and laundry.

West Bromwich and District Hospital.—House Surgeon and Assistant House Surgeon, unmarried. Salary £150 and £120 per annum respectively, with residence, board, and laundry.

Western General Dispensary, Marylebone-road, N.W.—Honorary Ophthalmic Surgeon.

West Ham and Eastern General Hospital.—Resident Medical Officer. Salary £160 per annum. Also House Physicians. Salary £120 and £100 per annum, with board, residence, and washing.

Wigan, Royal Albert Edward Infirmary and Dispensary.—Junior House Surgeon. Salary £150 per annum, with board, apartments, and washing.

Wolverhampton and Staffordshire General Hospital.—Resident Medical Officer and House Surgeon for six months. Salary at rate of £150 per annum, with board, rooms, and laundry.

Worcester General Infirmary.—Resident Medical Officer. Salary £150 per annum, with board, residence, and washing.

Wrexham Infirmary.—Resident House Surgeon. Salary £125 per annum with board, lodging, and washing.

York Retreat.—Junior Assistant Medical Officer. Salary £200 to £225 per annum, with board, lodging, &c.

Births, Marriages, and Deaths.

BIRTHS.

Brodribb.—On May 21st, at Pevensey-road, St. Leonards-on-Sea, the wife of Arthur W. Brodribb, M.A., M.B., L.R.C.P., of a son.

Cunningham.—On May 18th, at Gwynfa, Llandrindod Wells, the wife of J. B. Cunningham, M.B., Ch.B., of a daughter.

Glenn.—On May 19th, at Merrion-square, Dublin, the wife of John H. R. Glenn, M.D., of a son.

Masefield.—On May 20th, at "Tolima," Trentham, Staffs, the wife of W. Gordon Masefield, M.R.C.S., L.R.C.P., of a son.

Taylor.—On May 18th, at La Jaspellerie, Sark, Channel Islands, the wife of Ashby Taylor, Medical Officer of Sark, of a daughter.

MARRIAGES.

Gillon—Hutchison.—On May 19th, at St. George's, Hanover-square, Lieutenant-Colonel G. Gore Gillon, F.R.C.S. Edin., R.A.M.C. (temp.), late New Zealand M.C., to Jean Frances Hutchison, widow of Joseph Hutchison, of Woodside, Lanarkshire.

Lee—Gompertz.—On May 21st, in London, James Carrel Lee, M.D., McGill University, Montreal, son of Mr. and Mrs. Lee, of Quebec, Canada, to Ethel Gompertz, M.B. Glasg., daughter of Colonel and Mrs Gompertz, of Teignmouth, Devon.

Wilson-Smith—Lawes.—On May 18th, at St. Mark's Church, Regent's Park, London, Lieutenant William Arthur Wilson-Smith, M.D., R.A.M.C., to Dorothea Grace, second daughter of Mr. and Mrs. J. Edward Lawes, Woodford House, Aldershot.

DEATHS.

Beattie.—On April 28th, at Maiduguri, W. Africa, John Abernethy Beattie, M.D., of the West African Medical Staff, aged 27 years.

Chapman.—On May 13th, killed in action in France, Lieutenant G. M. Chapman, M.B. Cantab., R.A.M.C.

Gordon.—On May 20th, at Calcutta, of heart failure, Reginald Gordon, M.B., Ch.B., Surgeon, s.s. *Nankin*, aged 38 years.

Payne.—On May 21st, at 76, Onslow-gardens, South Kensington, S.W., Surgeon-General Arthur James Payne, M.D., I.M.S. (retired), in his 89th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

BOOKS, ETC., RECEIVED.

Allen, George, and Unwin, Limited, London.
The Arcana of Freemasonry. By Albert Churchward, M.D., M.R.C.P., F.G.S., P.M., P.Z., 30°. Price 7*s*. 6*d*. net.

Arnold, Edward, London.
Eye-Witness's Narrative of the War: From the Marne to Neuve Chapelle. Price 1*s*. net.

Cassell and Co., Limited, London, New York, Toronto, and Melbourne.
Materia Medica and Therapeutics. By J. Mitchell Bruce and Walter J. Dilling. Tenth edition. Revised to correspond with the British Pharmacopœia, 1914. Price 6*s*. 6*d*. net.

King, P. S., and Son, London.
The Nature and Purpose of the Measurement of Social Phenomena. By A. L. Bowley, Sc.D. Price 3*s*. 6*d*. net.

Lewis, H. K., London.
Occupational Affections of the Skin: A Brief Account of the Trade Processes and Agents which Give Rise to Them. By R. Prosser White, M.D. Edin., M.R.C.S. Lond. Price 7*s*. 6*d*. net.

Routledge, George, and Sons, London.
Towards Racial Health: A Handbook for Parents, Teachers, and Social Workers on the Training of Boys and Girls. By Norah H. March, B.Sc., M.R.San.I. With a Foreword by J. Arthur Thomson, M.A., LL.D., Professor of Natural History in the University of Aberdeen. Price 3*s*. 6*d*. net.

Saunders, W. B., Company, London.
Medical Electricity, Röntgen Rays, and Radium. By Sinclair Tousey, A.M., M.D., Consulting Surgeon to St. Bartholomew's Clinic, New York City. Second edition, thoroughly revised and greatly enlarged. Price 35*s*. net.
Infection, Immunity, and Specific Therapy. By John A. Kolmer, M.D., Instructor in Experimental Pathology, University of Pennsylvania. Price 25*s*. net.

Notes, Short Comments, and Answers to Correspondents.

PATENT MEDICINES.

The Commissioners of Customs and Excise in their latest report give the subjoined particulars respecting the number of licences issued to makers or vendors of patent medicines in England and Scotland and the amount of duty collected (the duty, it is pointed out, does not extend to Ireland).

Year ended March 31st.	England.		Scotland.		Total.	
	No.	Amount	No.	Amount.	No.	Amount.
1905 ...	36,999	£9248	3130	£782	40,129	£10,030
1906 ...	37,568	9392	3166	792	40,734	10,184
1907 ...	38,166	9544	3187	798	41,353	10,342
1908 ...	39,023	9757	3249	813	42,272	10,570
1909 ...	39,262	9815	3301	825	42,563	10,640
1910 ...	39,113	9777	3300	827	42,413	10,604
1911 ...	39,430	9856	3267	817	42,697	10,673
1912 ...	39,848	9961	3283	820	43,131	10,781
1913 ...	39,849	9963	3269	817	43,118	10,780
1914 ...	39,914	9980	3242	811	43,156	10,791

The net receipts for medicine stamp duty are shown in a separate table as follows:—

Year ended Jan. 31st.	England.	Scotland.	Total.
1905	£329,171	£2,268	£331,439
1906	321,543	2,569	324,112
1907	324,180	2,926	327,106
1908	330,735	3,407	334,142
1909	312,204	3,285	315,489
1910	310,203	2,911	313,114
1911	322,696	2,950	325,646
1912	324,861	2,996	327,857
1913	325,420	2,899	328,319
1914	357,570	2,807	360,377

It should be explained that the licence duty payable by makers or vendors of patent medicine is in Great Britain 5*s*. per annum, and that the duty payable on medicine labels is 1½*d*., 3*d*., 6*d*., 1*s*., 2*s*., or 3*s*., according to the price of the medicine.

HEALTH AND SANITATION IN THE EAST AFRICA PROTECTORATE.

The report on the East Africa Protectorate for the year 1913-14 has been received at the Colonial Office and presented to both Houses of Parliament. In the section of the report dealing with medical matters it is mentioned that "if it were not for the disastrous effects of the epidemic diseases which so seriously affected the Protectorate during the year it could be said that a better standard of health was maintained than has yet been recorded. The grand total of those who presented themselves for treatment in 1913 was 108,520 as against 93,408 in 1912. The predominating diseases, affecting all zones in almost equal proportions, were diseases of the digestive, respiratory, and locomotory organs, and affections of the skin. Of the more preventable diseases malaria easily comes first, very few parts of the country escaping this infection. Dysentery also is generally prevalent. Antityphoid inoculation has been inaugurated." Then follow details, of which we subjoin a summary:—

Coast zone.—The number of cases of malaria treated was less than in the previous year, the decrease being to a great extent due to the spread of knowledge and an extended use of quinine. There were 11 cases of blackwater fever, and 1 case of trypanosomiasis, the subject being a derelict native brought in by the police, of whom no history could be obtained. There is a large field for research in the study of elephantiasis, as cases are common, though rarely presenting themselves for treatment. There were 208 cases of plague (as compared with 27 in the previous year), with a death-rate of 88·46 per cent., the vast majority of cases occurring in Mombasa. The type was largely bubonic, with a serious proportion of pneumonic cases. Small-pox occurred at infrequent intervals. The number of cases of dysentery increased considerably, the chief sufferers being imported labourers from Kikiyu and Kavirondo. There were 28 cases of beri-beri, the patients being all from up country. There were 4 cases of enteric fever (all Europeans), none of which proved fatal. There were sporadic cases of cerebro-spinal meningitis. The improvement in general conditions of health of the European population was satisfactorily maintained; malaria was the principal cause of sickness.

Mountainous area.—The health of both Europeans and natives was more satisfactory than in the previous year. There was an appreciable decrease in the number of cases of malaria; the type was largely subtertian. There were 3 cases of blackwater fever, 1 of which proved fatal. There were 25 cases of plague at Nairobi, with 19 deaths, and 31 cases at Kisumu, with a mortality of 87 per cent. 63 cases of small-pox were recorded, of which 12 were fatal. A severe outbreak of dysentery occurred amongst the labourers employed on the construction of the Eldoret-Londiani road. The total number of cases throughout the zone was 777, as against 612 in 1912. There were 21 cases of enteric fever, 1 of which proved fatal. The number of cases of cerebro-spinal meningitis reported was 288, with 152 deaths. The rains were early and prolonged, and it was during these cooler months that the epidemic was more apparent. Amongst the European population the most noticeable feature during the year was the large number of children's diseases, chiefly cases of intestinal trouble.

Kenya and Nyanza Provinces.—During the wetter and colder months rheumatic affections prevailed very largely in the neighbourhood of Mount Kenya. 3627 cases of malaria were recorded, as against 3134 in 1912. Some of the native chiefs in the Kenya Province have taken to sleeping under mosquito nets. One case of blackwater fever was reported. One imported case of sleeping sickness was discovered at Kisii, 30 or 40 miles from the lake shore, but notifications of the occurrence of this disease are yearly getting rarer. The epidemic of cerebro-spinal meningitis which broke out in May was the most disastrous experienced in the Kenya Province since the advent of European occupation. So severe was it that at one time it threatened to paralyse the interior economy of the province. It is quite impossible to estimate the number of cases, but it is probable that the normal sick-rate among the native population was more than doubled. The death-rate is estimated at from 3 to 10 per cent. above the normal. The infection did not reach the Nyanza Province till the latter part of the year. 31 cases of plague occurred at Kisumu, with a mortality of 87 per cent. There were 15 cases of enteric fever, with 3 deaths. For the first time on record no cases of small-pox were reported in the Nyanza Province, but desultory cases were met with in the Kenya Province.

Desert zone.—There were several cases of conjunctivitis and corneal ulcers, probably due to glare, sand, and flies. The predominating cause of sickness was malaria, 445 cases being notified in Kismayu alone. Dysentery was common in Jubaland, owing to the dependence of the population on the muddy waters of the Juba River and polluted wells. There were 2 cases of beri-beri and cerebro-spinal meningitis appeared in two instances. The general standard of health of Europeans in these regions has always been good, and this year was no exception; only 1 case of malaria was recorded.

Vaccination.—During the year 131,757 vaccinations were performed. The lymph used was prepared at the Government laboratory, and the quantity issued was 376,202 doses.

Sanitation and preventive measures.—The Sanitation Division of the Administration was created on April 1st, 1913, under a chief sanitation officer. In June Professor W. J. Simpson, C.M.G., professor of hygiene at King's College, London, arrived to inquire into the sanitary conditions of the Protectorate. Energetic measures are being carried out against mosquitoes by gangs maintained at Mombasa, Nairobi, and Kisumu. The measures adopted to suppress the outbreak of plague at Mombasa were house-to-house visitation, fumigation, segregation, inspection of travellers, and inoculation with Haffkine's prophylactic in 48,478 instances. Similar steps were taken in other parts of the Protectorate. No water-borne sewage scheme has yet been installed, but in a few isolated cases septic tanks have been added to residences. The single-bucket system is in vogue generally. The contents of the buckets are thrown into the sea at Mombasa, and buried in trenches at Nairobi, Kisumu, and other towns. Except in Nairobi, where the Bransby-Williams scheme is now well in hand, no township possesses a drainage scheme of a kind that can be regarded as satisfactory. At Mombasa and in the scattered residential districts the need is not acute owing to the absorbent nature of the soil, but in the more densely populated areas the question is of more importance. A large amount of the work performed by antimosquito gangs is caused by the absence of adequate provision for the removal of waste water. It must now be accepted that all African rivers are more or less polluted, and general filtration, &c., is most necessary before water can be considered fit to drink. The Mombasa service will not be completed for some time. Similar services are being taken in hand for Nakuru and Kisumu. Considerable work has been done during the year in bush cutting and in digging out roots. The alterations in the general appearance of certain areas in Mombasa, Nairobi, and Kisumu are very much for the better. The southern part of Mombasa is now clear of bush.

RHUBARB POISONING.

To the Editor of THE LANCET.

SIR,—In your issues of May 8th and 22nd I note letters from "M.D." and "M. L. J." relating illnesses apparently due to eating rhubarb. I should like to say that about two months ago I had a similar experience after partaking of rhubarb for lunch. Two or three hours afterwards I was seized with colicky pains in the abdomen, which gradually increased in intensity, and were shortly afterwards succeeded by rise of temperature, quick pulse, vomiting, and purging. I felt violently ill for a few hours; then the symptoms gradually subsided, and, unlike your correspondents, were not succeeded by any renal or vesical trouble. I should add that a lady of my acquaintance was made similarly ill just previously after partaking of stewed rhubarb at a meal. The symptoms may be attributed to the poisonous effects of the oxalic acid in rhubarb.

I am, Sir, yours faithfully,
May 25th, 1915. M.B.

THE DANCES OF GREAT BRITAIN AND HER ALLIES.

A RECITAL of patriotic dances will take place at 5.30 P.M. on Thursday next, June 3rd, the birthday of His Majesty King George V., at the Fyvie Hall of the Regent-street Polytechnic, Regent-street, London, W. The children taking part will be relatives of airmen, soldiers, or sailors, and the proceeds of the recitals will be devoted to the expenses of the wards for nursing wounded soldiers at the Heritage Craft Schools, Chailey, Sussex (Princess Louise Military Wards). Those who attend the recital are invited to bring gifts for the troops with them, such as handkerchiefs, socks, shirts, tobacco, cigarettes, sweets, gramophone records, books, and magazines; sheets, single or in pairs, will also be most acceptable. Tickets, price 5*s*., children 2*s*. 6*d*., can be obtained from Mrs. C. W. Kimmins, The Old Heritage, Chailey, Sussex.

There will be another performance at 7 on the same day and at the same place in aid of the same object. For tickets, price 2*s*. and 1*s*. 6*d*., application should be made to Mrs. Matthews, Glenkindie, Drewstead-road, Streatham, S.W.; Miss Graham, 38, Mecklenburgh-square, W.C.; Miss Kingston, 71, Corringham-road, Golder's Green, N.W.; or Miss Simmons, 8, Worple-avenue, Wimbledon, S.W. A stamped addressed envelope should be enclosed.

PERMANENT DISCOLOURATION OF THE SKIN.

C. W. (Wolverton, Bucks) writes as follows: "A man aged 53 had an attack of gout during the severe weather in January and February this year. With the gout he also had an attack of eczema. The penis, scrotum, anus, and calves of the legs were attacked by the eczema. In a month both gout and eczema were cured. The skin of the penis and scrotum is now normal, but that of the nates and the calves of the legs is of a dirty-brown colour. The patient has consulted several medical men with regard to this colour, and they have no suggestion to make. It was thought that in time the skin would become normal. Could any of your readers suggest a remedy to clear the skin on these parts? If the patient goes to the sea or the baths it is very inconvenient to have such patches of dirty skin visible! Is there *no* remedy?"

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 9.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 26th, 1915.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
May 20	30·020	S.	...	80	61	49	52	54	Raining
,, 21	30·020	S.	...	112	71	54	57	60	Cloudy
,, 22	30·070	N.E.	...	118	68	56	56	59	Cloudy
,, 23	30·180	N.E.	...	119	74	52	55	60	Fine
,, 24	30·210	E.	...	121	76	51	53	58	Fine
,, 25	30·130	N.E.	...	121	78	47	53	56	Fine
,, 26	29·934	N.E.	...	121	80	54	56	63	Fine

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.
THURSDAY.—Papers:—Mr. E. J. Russell: Soil Protozoa and Soil Bacteria (communicated by Mr. H. T. Brown).—Mr. C. Dobell and Mr. A. P. Jameson: The Chromosome Cycle in Coccidia and Gregarines (communicated by Prof. J. B. Farmer).—Prof. O. W. Richardson: The Influence of Gases on the Emission of Electrons and Ions from Hot Metals.—Prof. C. H. Lees: On the Shapes of the Equipotential Surfaces in the Air near Long Buildings or Walls, and on their Effect on the Measurement of Atmospheric Potential Gradiants.—Mr. J. W. Nicholson: The Band Spectrum associated with Helium (communicated by Prof. A. Fowler).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
MONDAY.
SECTION OF ODONTOLOGY (Hon. Secretaries—F. Coleman, F. R. Smyth): at 8 P.M.
Annual General Meeting.—Election of Officers and Council for Session 1915–1916.
Casual Communication:
Mr. J. G. Turner: A Note on Extraction.
Paper:
Mr. F. J. Bennett: Recent Studies in Calcification of the Teeth.
THURSDAY.
SECTION OF DERMATOLOGY (Hon. Secretaries—S. E. Dore, A. M. H. Gray): at 5 P.M.
Adjourned Meeting.
Debate on the Pemphigoid Eruptions.
FRIDAY.
SECTION OF EPIDEMIOLOGY AND STATE MEDICINE (Hon. Secretaries—G. S. Buchanan, William Butler): at 8.30 P.M.
Paper:
Mr. Major Greenwood, jun., and Mr. G. Udny Yule: Anti-typhoid and Anti-cholera Inoculation: a Statistical Study.
WEDNESDAY (June 9th).
SECTION OF OPHTHALMOLOGY (Hon. Secretaries—Leslie Paton, Elmore W. Brewerton).
Cases (at 8 P.M.)
Paper (at 8.30 P.M.):
Mr. Fisher: Retinitis in Pregnancy.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.
THURSDAY.—4.15 P.M., Election of Officers, 1915–1916. Clinical Meeting.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, Society's Rooms, West London Hospital, Hammersmith-road, W.
FRIDAY.—8 P.M., Cases. 8.30 P.M., Paper:—Dr. F. S. Palmer: The Functional Palsies and their Recognition.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.
MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.
TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.
THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY.—Clinics:—10.30 A.M., Surgical Out-patients (Mr. E. Gillespie). 2.30 P.M., Medical Out-patients (Dr. T. R. Whipham); Gynæcological Out-patients (Dr. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).
TUESDAY.—2.30 P.M., Surgical Operations (Mr. Carson). Clinics:—Medical Out patients (Dr. A. G. Auld); Surgical Out patients (Mr. Howell Evans); Nose, Throat, and Ear Out-patients (Mr. H. D. Gillies). Radiography (Dr. Metcalfe). 3.30 P.M., Medical In-patients (Dr. A. J. Whiting). 4.30 P.M., Clinical Demonstration:—Mr. J. Howell Evans: Selected Surgical Cases.
WEDNESDAY.—Clinics:—2.30 P.M., Throat Operations (Mr. Gillies). Children Out-patients (Dr. T. R. Whipham); Eye Out-patients (Mr. R. P. Brooks); Skin Out-patients. 5.30 P.M., Eye Operations (Mr. R. P. Brooks).
THURSDAY.—2 30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patients (Dr. A. J. Whiting); Surgical Out-patients (Mr. Carson); Radiography (Dr. Metcalfe). 3 P.M., Medical In-patients (Dr. R. M. Leslie).
FRIDAY.—2.30 P.M., Surgical Operations (Mr. Howell Evans). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. E. Gillespie); Eye Out-patients (Mr. R. P. Brooks).

THE THROAT HOSPITAL, Golden-square, W.
MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M. Clinical Lecture.

KING'S COLLEGE (UNIVERSITY OF LONDON), Physiological Laboratory, King's College, Strand, W.C.
Course of Advanced Lectures in Physiology:—
MONDAY AND WEDNESDAY.—4.30 P.M., Prof. T. G. Brodie: The Gases of the Blood. (Lectures I. and II.)

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

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THE LANCET, JUNE 5, 1915.

ABSTRACT OF

An Address

ON

ARTERIO-SCLEROSIS.

Delivered before the Cardiff Medical Society

By W. LYNE BLIGHT, M.D. DURH., F.R.C.S. ENG.

AFTER a brief introduction on the history of our gradually evolving conception of arterio-sclerosis, Dr. Blight continued:—

INCIDENCE AND CAUSATION.

Arterio-sclerosis is a disease which, although mainly incidental to the middle period of life and becoming progressively and cumulatively worse as age advances, yet occurs in young people and even in infants. It is more common in men under 50 years of age than in women, but after the climacteric period is passed it is as frequent in women as in men, if not more so. There are four general causes of arterio-sclerosis: (1) The normal wear and tear of life; (2) the acute infections; (3) the intoxications; and (4) those combinations of circumstances which keep the blood pressure high.

The occupations most subject to the wear and tear of life are those of navvies, blacksmiths, porters, labourers, soldiers, and mountaineers, whose persistent use of muscles over prolonged periods to an extent sufficient to cause hypertrophy of the heart is a most potent factor in causing a heightened blood pressure. The evidence of internal strain as a factor in raising the blood pressure is shown by the presence of sclerosis of the pulmonary artery in cases of prolonged mitral stenosis. Of the acute infections causing the disease the most important is syphilis, the others being the exanthems, influenza, and tuberculosis. Syphilis is the chief cause of arterio-sclerosis in infants and young people. Of the intoxications, the chief exogenous poisons are alcohol, lead, and tobacco. The chief endogenous poisons are those of gout, diabetes, Bright's disease, and obesity.

In the prodromal stages of the disease a spasm of the arterioles is chiefly brought about by irritation of toxic products causing a contraction of the muscular coat, which becomes hypertrophied, producing an increased peripheral resistance, with a compensatory increased force of the heart's action, causing its hypertrophy and a rise in the arterial pressure, which is the most frequent result of the persistent use of muscles. The normal blood pressure in persons under 30 years of age is 125 mm. Hg, and from this age onwards the blood pressure increases, but a pressure above 150 mm. Hg, except in the aged, is abnormal. Other causes of increased arterial pressure are excesses in food and drink. Dr. F. A. Mahomed believed that this high pressure in the arteries precedes the development of renal disease before the albuminuric stage of scarlatinal nephritis, and that in the red granular contracted kidney the disease was primarily in the blood-vessels generally. The regular or frequent use of adrenalin and other agents which raise the blood pressure causes a necrosis of the muscular fibre and elastic tissue of the media.

In the early stage of tubal nephritis high arterial pressure can only be produced by contraction of the muscular walls of the arterioles; and even in certain chronic forms this must still play an important part, but the presence of endarteritis obliterans produces and maintains the permanent peripheral resistance which leads to the high arterial tension of renal cirrhosis, as a physiologically hypertrophied heart cannot raise arterial pressure unless it is supported by a resistance in the systemic arterioles.

The blood-vessels are always in a state of activity, and they live under three main conditions: (1) That use maintains and in a measure sustains structure; (2) that over-use leads to degeneration; and (3) that at about 60 years or 70 years of age the arteries are unable to endure any longer the wear and tear of life; and if there be a poor variety of muscular and elastic tissue and fibre, as sometimes occurs not only in individuals but in whole families, the incidence of the disease, other conditions being equal, occurs at a much earlier period of life.

SYMPTOMS.

Arterio-sclerosis disturbs function by lessening the amount of blood supplied to an organ unless the blood pressure rises concurrently with the narrowing of the lumen of the vessel. The result is a slow progressive atrophy with gradual loss of function in all the areas supplied by a sclerotic vessel; and when the artery becomes finally obliterated, especially if it occur suddenly, necrosis and gangrene of the part normally supplied by the sclerotic vessel occur; hence gangrene of the foot in the arterio-sclerosis of diabetes. An artery attacked by the sclerotic process becomes irritable and liable to spasm; there is a sudden loss of blood to the part, with pain, loss of arterial pulse, and loss of function. The pain, when occurring in advanced stages of the disease, for instance, in the calf muscles, is frequently of a very severe character, and is more liable to occur in those patients who are of a full habit of body and have a gouty diathesis, frequently occurring in the night, and only relieved by opium. These vascular crises are the cause of the transient mono- or hemi-plegias, aphasia, paraplegia, transient amaurosis, anginal attacks, and probably of lead colic and the crises of tabes.

The premonitory symptoms of arterio-sclerosis are frequently evident in a middle-aged patient who comes to us complaining of headache, drowsiness, morning fatigue, feeling more tired when he gets up than when he went to bed, ineptitude for work, coldness of the extremities, tinnitus, attacks of migraine or neuralgia, together with high-pressure pulse and accentuated second sound of the heart. On the other hand, a middle-aged man may have a feeling of good health and may be able to perform the ordinary duties of his life, complaining of no symptom and perhaps priding himself on his fitness, and in whom no organic lesion was suspected to exist. Yet he may die suddenly by rupture of a cerebral vessel, thrombosis of a coronary artery, rupture of a small aneurysm, or acute dilatation of the heart. Death is thus the only intimation of anything being wrong with his system, demonstrating the great powers of adaptation of the body.

Another type of case is that of a man, beyond the middle period of life, who has worked hard with his muscles, eaten much, and drunk hard; he has a persistent elevation of the arterial blood pressure and for some years has been feeling unwell, suffering from insomnia, cerebral confusion, despondency, and nervousness. The insomnia is so distressing that the patients often resort to taking morphia or

No. 4788.

other hypnotic. The palpable arteries are found thickened and tortuous; there is an increased vigour of the cardiac impulse, the apex beat is displaced slightly outwards, the first heart sound is faint, dull or prolonged, or reduplicated or replaced by a murmur, and the second sound is accentuated with a loud ringing sound of a metallic quality.

An early symptom of the general disease is a slight pallor. As the vascular degeneration progresses the nutrition of the body generally and certain organs in particular suffer, the clinical history varying in every case according to the organ which suffers most and suffers earliest, whether brain, heart, or kidney; bronchitis and emphysema may be the first symptoms indicative of the disease. There is a gradual atrophy of the parenchyma of the various organs and tissues of the body, so that the patient ages visibly within a few years, loses his intellectual keenness and bodily vigour, the skin becomes flabby and lax, and the hair turns prematurely grey, though neither this nor arcus senilis is pathognomonic of arterio-sclerosis; the urine shows traces of albumin and tube casts may be present. Defective metabolism is frequently indicated by dyspeptic flatulence and intestinal troubles of various kinds. Anæmia becomes manifest. A patient under 40 years of age, the subject of this disease, will have symptoms of neurasthenia, be of an irritable temper, emotional, and suffer from sleeplessness.

It is probable the toxic agents are many and various, and arise from defective nitrogenous metabolism, and probably, as Bouchard suggests, consist of leucomaines produced in the body and ptomaines absorbed from the alimentary canal and improperly dealt with by the liver. When the sclerosis affects the cerebral vessels an early symptom associated with high blood pressure is headache, usually frontal and continuous, occasionally paroxysmal and resembling migraine. Another symptom is vertigo, usually transient and not so severe as in Ménière's disease, which may be accompanied by tinnitus and may occur with epileptiform crises, or, as in Stokes-Adams disease, with epileptiform and syncopal attacks with a permanently slow pulse associated with high arterial pressure.

Another important manifestation is the occurrence of transitory disturbance of function of parts of the brain or cord, leading to mono- or hemi-plegia, amaurosis, aphasia, and paraplegia, and ending in complete recovery. These attacks may be frequent, sometimes occurring on one side of the body and sometimes on the other, but their transitory nature, frequent occurrence, and complete recovery distinguish these attacks, probably due to angiospasm of the cerebro-spinal arteries, from the more serious ones of hæmorrhage, thrombosis, and embolism. Associated with these symptoms are various neurasthenic conditions, such as absence of mind, temporary derangement of mind, irritable temper, confusion of thought, dulness of comprehension or perception, failure of memory and faulty judgment in simple matters; an inequality in the size of the pupils, and exaggerated reflexes may be present, leading to a progressive dementia in which the grandiose delusions are usually absent.

Cardio-vascular System.

In the cardio-vascular system the sclerosis affects the valves, the myocardium, and the coronary arteries. The lesions of the aortic and mitral valves are due to a sclerotic process in the segments identical with that which goes on in the vessels. Most cases of aortic insufficiency in men occur from this cause. In the myocardium in the early stage there is a pure hypertrophy of the left ventricle owing to increased peripheral resistance and of the right ventricle to a less and variable extent. In the diffuse form of the disease there is a gradual failure of the hypertrophied cardiac muscle, which is a common and serious event, leading to dilatation, orthopnœa, slight œdema of the feet and beneath the eyes, cough and perhaps blood-stained expectoration, and progressive asystole. According to Basch, dyspnœa is the only criterion of cardiac insufficiency due to sclerosis, latent or incipient. It is often a most distressing symptom and frequently occurs in the night. An important subjective feature is breathlessness, especially on going upstairs or ascending a slight hill.

The objective symptoms are manifested by the visible, tortuous, pulsating, and thickened arteries, especially noticeable in the emaciated, senile, or prematurely senile patient. In the corpulent the only objective symptom of arterial change may be a high-pressure pulse at the wrist, the artery being firm and incompressible. A sphygmographic pulse tracing shows a gradual upstroke, no percussion wave, and a gradual down stroke in which the dicrotic wave is hardly visible. The pulse should be taken when the patient is standing up and compared with that when the patient is sitting or lying down. In the latter case under normal conditions it should become slower, but if it maintains its standing-up rate the state of tension in the arteries is unnaturally high or if the pulse become more frequent in the lying-down position it shows the still more advanced and serious state of the sclerosis. It is necessary to distinguish between the hard sensation conveyed to the finger by a high-tension pulse simply, in which case the pulse is scarcely felt when empty, and that in which there is a sclerosis and calcification of its walls and in which the artery is as prominent when empty as when full. These two conditions may, however, coexist.

The nutrition of the heart substance becomes inadequate from the increased resistance to be overcome and the participation of the nutrient vessels of the heart in the degenerative process, so that whilst the heart has increased work to do the quality and quantity of the blood-supply become progressively more impaired and the myocardium undergoes fatty or fibroid degeneration, resulting in a dilatation of the ventricle with a mitral murmur appearing, and dropsy, due partly to cardiac failure, partly to the hydræmic condition of the blood, and partly to the altered condition of the vessel walls, gradually increases in extent, the patient ultimately dying from hypostatic pneumonia. Myocardial degeneration and weakness are frequent results of the narrowing of the orifices of the coronary arteries by sclerosis, which also causes anginal attacks in young syphilitic subjects, but these attacks are more frequent when the main branches are involved. Dr. Mott believes that angina pectoris occurs especially in cases of increased peripheral resistance, and is not due to a mere stenosis of the coronary arteries without this resistance. The coronary arteries may be involved in this disease out of all proportion to the other vessels, and sudden death may occur in middle-aged men who had never had any cardiac symptoms, but on post-mortem examination a gradual fibrosis or perhaps areas of anæmic necrosis with softening and occasional ruptures are found.

Renal Symptoms; Hæmorrhages.

Although renal symptoms supervene in a large number of cases, widespread arterio-sclerosis may occur without nephritis or recognisable cause. The disease may be associated with small contracted granular kidney or come on insidiously in gout or chronic lead poisoning. The true arterio-sclerotic kidney is a red beefy organ which is firm, hard, and dark in colour, not at first reduced in size, sometimes even enlarged. Very often there are large flat areas of atrophy of the cortex, or a large section may be involved in consequence of an obliteration of the arteries passing to the part. The urine may at first contain no albumin, or if present it is not large in amount. The specific gravity is normal or sometimes high. Later on the albumin becomes larger in amount, and sometimes with cardiac dilatation the urine becomes scanty, with a large amount of albumin and numerous tube casts due to an intercurrent nephritis.

Hæmorrhages into the retina and choroid, epistaxis, hæmoptysis, hæmatemesis (which may be fatal), hæmaturia, and hæmorrhages into the subcutaneous tissue may occur as the result partly of high arterial pressure and partly of arterio-sclerosis. It was pointed out by Dr. Mahomed that even when the patient is much blanched by loss of blood the pressure in the arteries is still excessive.

TREATMENT.

The prognosis depends upon the stage of the disease. In the early stage of high arterial pressure much may be done by hygienic measures to prevent and arrest the disease. The patient should avoid all conditions which interfere with the nutrition of the body and lead as peaceful a life as possible, unattended by any mental worry or physical strain. Although a protracted holiday is helpful, it is not advisable for the patient to give up work entirely, but rather to lessen it in amount, and this will depend on whether marked cardiac failure, mental changes, or pronounced local features are present, and the advice will be given accordingly. Warm baths or occasional Turkish baths with friction and massage are helpful. A most important point in the treatment at this stage is that the food should be lessened in quantity and meat food almost abolished, as this, with the general mode of life, is the best way of lowering blood pressure. Natural aperient waters, as those of Cheltenham, in a moderate amount are beneficial. Generally speaking, all alcoholic liquors should be prohibited. The most useful drugs are amyl nitrite, trinitrin, erythrol tetranitrite, and sodium nitrite.

When fibrosis and calcification have taken place the damage is irreparable, but still the symptoms may be relieved and the arterio-sclerosis prevented from increasing. A milk diet is the best, especially at night, and when the patient suffers from a bad headache, dyspnœa, and insomnia these symptoms will often then disappear. In addition to milk as a general diet the patient may have oysters, fish—excepting those of the crustacean order—most vegetables, bread, butter, and buttermilk, and plenty of fruit. Iodide of potassium given for a period of some months has been most frequently used, but authorities differ as to its beneficial effect.

PTOMAINE POISONING AT LEEDS.—An outbreak of ptomaine poisoning in the Woodhouse district of Leeds continues to cause some anxiety. There are 120 cases, the condition of six of whom is still critical, and one death has been reported. The outbreak was first reported on May 22nd.

RHEUMATIC FEVER AND RHEUMATOID ARTHRITIS:

THE GEOGRAPHICAL FACTOR.

BY J. T. CLARKE, M.R.C.S., L.R.C.P. LOND., D.P.H.

VARIOUS theories have been published in the attempt to expound the cause of rheumatoid arthritis, but that none of them have been satisfactory is shown by the large amount of correspondence following any paper on the subject. In this paper I shall bring forward what I believe to be an unrecognised fact, and shall endeavour to show how it bears on some of the more common theories. I shall try to demonstrate that the geographical distribution of rheumatic fever and rheumatoid arthritis is the same, and shall argue that local as apart from universal distribution points rather to a specific cause than to the truth of any of the other theories of causation.

I must mention at the outset that Hirsch's book, which is still quoted as an authority on the geographical distribution of disease, was published as far back as 1886, and that there is much reason for correcting some of his statements; and as under the heading of rheumatism he "disclaims the possibility of making any sharp distinction between the several morbid processes included under the term rheumatism," his remarks on the subject cannot be accepted as having much value. I must also say at once that I am not writing about any of those diseases often called rheumatism, which are really pains or swellings due to other diseases such as syphilis, gonorrhœa, septic absorptions, or injuries; nor of the various pains in muscles and fasciæ such as lumbago or pleurodynia, nor of the pains due to the various fevers, influenza, dengue, or malaria, and many other pains often called rheumatism. The word rheumatism is now omitted from the nomenclature of diseases.

By rheumatic fever I mean the ordinary typical rheumatic fever, which I need not describe, but which, I would mention, has a special predilection for synovial and serous membranes, and by rheumatoid arthritis I mean the disease defined by Osler as "a chronic disease of the joints, of doubtful etiology, characterised by changes in the cartilages and synovial membranes with periarticular formation of bone and great deformity," in fact, the disease he calls arthritis deformans. The fact to which I wish to draw attention is that there is no rheumatic fever and no rheumatoid arthritis in the Malay Peninsula, and I shall produce some figures which will show that it is extremely probable that neither of these diseases occurs in any part of the tropics. By tropics I mean not merely hot countries, but that part of the world which lies between the north and south latitudes of 23° 28′, and in what I say I am considering only land at or near the sea-level. I mention this because Osler writes that "the two countries with the highest admissions in the British Army per 1000 of strength, Egypt and Canada, oddly enough, have climates the most diverse." But neither of these is a tropical country. Egypt is a hot country, but not tropical.

The following figures[1] show the total in-patients and the number of cases of rheumatic fever and of

	Total in-patients.	Rheumatic fever.	Rheumatoid arthritis.
Perak	31,741 ...	1 ...	Nil.
Selangor	22,889 ...	Nil. ...	,,
Pahang	4,528 ...	1 ...	,,
Negri Sembilan	12,050 ...	2 ...	,,

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[1] Journal of Tropical Medicine, 1912.

rheumatoid arthritis in the Federated Malay States returns for the year 1911.

My attention was first directed to this matter in the post-mortem room, as I was never able to find a heart with rheumatic lesions of the valves. For 18 years I searched for rheumatic hearts and have asked other medical men to find me one, but so far I have not come across a single instance. In a period of this duration a medical officer in Malaya would have about 50,000 in-patients pass through his hands. During my search for rheumatic fever and for rheumatic hearts I have been also on the look-out for chorea, as it is generally considered to be a disease due to the same cause as rheumatic fever, but have found none. I have heard of two cases diagnosed as chorea, but this is so small a number that there is the possibility of errors of diagnosis; and the disease is not certainly always of rheumatic origin, as cases have been reported which followed gonorrhœa and the puerperium.

Rheumatoid arthritis I have also failed to find, and this concurrent absence of both rheumatic fever and rheumatoid arthritis in the Malay Peninsula contrasts so markedly with their concurrent presence in the temperate climates that it has left the impression that there may be a causal connexion between the two diseases.

In addition to my experience in one part of the tropics which I first recorded in 1896,[2] I now refer to the opinion of others.

Major Buchanan, I.M.S., wrote:[3] "Up to the moment we have no reliable statement to justify the belief that rheumatic fever (acute rheumatism) has been met with within the tropics." Unfortunately in mentioning India he did not distinguish between India as a whole and tropical India, which is only about one-third of the peninsula. It is obvious that in the higher tropical latitudes cases may easily have come from the temperate zones, and so might vitiate figures collected in Bombay or Calcutta, which are only just inside the tropics.

Mr. James Cantlie wrote[4]: "Rheumatic fever I have never seen in any hospital in China, India, or Egypt, in either native or European. This may be a faulty observation on my part, but I only state what I observed whilst on tour in India, during which I visited hospitals in Madras, Mudura, Bombay, Quetta, Lahore, Delhi, and Calcutta. In Egypt I never met with a case of acute rheumatism, nor in Hong-Kong nor South China during a nine years' residence." Mr. Cantlie's Hong-Kong experience is of fairly long duration and was in the tropics. Dr. McClosky, of Kuala Lumpur,[5] gave a similar result as the outcome of eight years' experience. Those who stated that they have seen cases of rheumatic fever in India do not state whether they saw them in tropical or non-tropical India.

From the *Journal of Tropical Medicine* (1911 and 1912) and from the Straits Settlements Medical Report I have collected the following figures:—

	Total cases treated.	Rheumatic fever.	Rheumatoid arthritis.
Singapore General Hospital	22,134 ...	Nil. ...	Nil.
Penang ,, ,, ...	6,870 ...	,, ...	6
Province Wellesley Hospital...	2,696 ...	,, ...	Nil.
Labuan	307 ...	,, ...	,,
Seychelles (Victoria Hospital)	388 ...	,, ...	,,
Northern Nigeria	Not given	684 ...	,,
Ceylon	78,065 ...	12 ...	,,
Grenada	1,823 ...	Nil. ...	,,
Gambia (Victoria Hospital)	666 ...	,, ...	,,
Nyassaland	20,560 ...	2 ...	,,

Of these figures, the 684 cases of rheumatic fever of Northern Nigeria are an obvious error of transcribing, for there are no cases of rheumatism, a heading which comes next below rheumatic fever and which in all the reports contains large figures. Only 2 of these cases are recorded as having died, and under "valvular diseases of the heart" there are only 13 cases. The medical report for the year 1910 for Ashanti, Northern Territories, and Gold Coast Colony is somewhat similar. Out of 43,618 cases treated there were 614 cases recorded as rheumatic fever with 1 death. I think that 1 death in 614 cases must throw some doubt on the diagnosis, but these figures may have got misplaced and should probably be placed under the heading rheumatism. In all these places many of the cases were probably diagnosed by native dressers; and native dressers when in a difficulty for a diagnosis are very apt to be satisfied with a name.

In most of these returns there are a few cases given of valvular disease of the heart. Some of these cases are probably the murmurs of dilated hearts, but post-mortem examination fails to find on the valves the vegetations of rheumatic origin. There are a certain number of atheromatous valves, but never have I found the rheumatic heart; and I do not think the atheromatous valve can be confused with the vegetative lesion of rheumatic fever.

I have by me the 1912 medical report of the Straits Settlements, which is a very full report. In Singapore hospitals there were 22,134 cases treated with 2584 deaths, but the words rheumatic fever, rheumatoid arthritis, and chorea do not appear. Under the heading rheumatism there are 63 cases with 1 death. Were these cases true rheumatic fever or did they even include a few cases of rheumatic fever I think there would be more deaths. There were 52 cases of valvular disease of the heart, a number which is suggestive when compared with the number which are found in the hospitals of temperate climates. Atheromatous hearts would easily supply this number, and Singapore is one of the big ports of the world; 409,328 passengers and 130,349 crew were examined in Singapore harbour, and these coming from all over the world might provide a few cases of rheumatic heart if any were found. In the post-mortem room of the pathological department, Singapore, there were performed 1422 necropsies, among which were found 19 cases of aortic chronic endocarditis and 7 cases of mitral chronic endocarditis. If in a post-mortem room which serves a population of 312,000 inhabitants only 7 cases of chronic mitral endocarditis are found, if in a hospital return of 22,134 patients there are no cases given of rheumatic fever, chorea, or rheumatoid arthritis, I think I am justified in my statement that these diseases do not occur in Singapore.

In almost every number of the *Journal of Tropical Medicine* are published the annual returns of some tropical country, and all show the same absence of rheumatic fever and of rheumatoid arthritis. Occasionally a medical man is met with who asserts that he has seen a case of rheumatic fever in the tropics. I have heard of a case diagnosed as rheumatic fever which turned out to be syphilis, and I was shown a supposed case which was undoubtedly a septic joint occurring in a case of dysentery. For the majority of the tropical countries the figures in the returns under these headings are zero, and I contend that in view of the number of cases in which the figure is zero, in view of my own experience and that of the writers I have quoted, and in view also of the small numbers diagnosed as valvular disease of the heart, the probability that the few cases given are either an error in diagnosis or in the subsequent transcription of the returns is greater than the probability that they are true cases of these diseases. And I further contend that these facts are sufficient to throw doubt on the statement of anyone who claims to have seen one or two cases. In other words, I claim that these diseases do not occur in the tropics.

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[2] Indian Medical Gazette, December, 1896.

[3] Journal of Tropical Medicine, December, 1899.

[4] Ibid., October, 1899.

[5] Ibid, January, 1900.

In contrast with the figures I have given those of Dr. Karl Grassmann[6] are worth attention. He gives the deaths due to the circulatory apparatus at ages 15 to 30 as 7 per cent., and at the ages 30 to 60 years as 14·15 per cent. of all deaths for Germany. This, when compared with the 0·0 per cent. of most tropical countries, or even with 0·26 per cent. of Singapore, is very remarkable.

Without necessarily accepting Poynton and Paine's bacillus as the cause, there are many reasons for considering that rheumatic fever is a specific disease dependent on one particular organism. According to Newsholme rheumatic fever shows great irregularities in its incidence from year to year. Seasons of epidemic prevalence tend to extend over periods of one to three years, with intervals of three, four, or six years. Epidemics vary in intensity. The death-rates are similar to those of some specific diseases; there are seasonal variations. It is more common in the towns than in the country; its greatest incidence is on the young. And I submit that its absence from the tropics is another link in the chain of evidence that it is a specific disease. There is another specific disease, scarlet fever, which does not occur in the tropics, but I know of no non-specific disease which does not occur in the tropics.

There are various theories of the etiology of rheumatoid arthritis:—1. That it is a neurosis. 2. That there is a deficiency of lime salts. 3. That it is due to a disturbance of metabolism. 4. That it is caused by absorption from chronic sores such as those of pyorrhœa alveolaris, or those in the region of the anus. 5. That it is due to insufficient sweating. 6. That it has a relationship to rheumatic fever. 7. That it is a specific disease. Of these the first four are just as likely to occur in the tropics as in the temperate climates, and the fifth is just as likely to be an effect as a cause and is very variable in different people in the tropics. No. 6 of these theories is supported by the geographical distribution. Neither rheumatoid arthritis nor rheumatic fever occurs in the tropics, and both are common in certain parts of the temperate zones.

The chronic absorption theory is very attractive, but absorption from chronic sores usually results in anæmia of a kind which is in no way characteristic of rheumatoid arthritis; and when a joint is enlarged as a sequel to a chronic sore, as in dysentery, an organism is found in the joint, which in no respect resembles the joints of rheumatoid arthritis. Where an inflamed joint is the result of a chronic infection the incidence is often on one joint only which may suppurate.

It is begging the question to label rheumatoid arthritis as fibrositis and to give it and all fibrosites the same etiology. The theory that rheumatoid arthritis is a specific disease is the one which seems the most probable. The symptoms are very definite, especially in the acute cases. Those of one case are as much like those of another as are the symptoms of any of the specific diseases. Two typical cases are almost facsimiles of one another, and the sometimes sudden onset bears in the same direction. But the point on which I rest my claim that it is a specific disease is its geographical distribution. It occurs in one part of the world and not in another; and the most likely reason for this is that the heat of the tropics is inimical to some organisms.

Many parasites are peculiar to hot climates, but many animals and plants can live only in the temperate zones, and just as some organisms are thermophilic so others have a low optimum temperature. I would here refer to the bacillus mycoides, which normally will not grow above 22° C., but which by gradually increasing the temperature can with difficulty be made to grow at a temperature of 37° C. It then, after a few passages through guinea-pigs, loses its flagella, develops a capsule, and produces symptoms in all respects similar to those of anthrax.[7] In the same way the natural optimum temperature of the organism of rheumatoid arthritis may be low and yet it may, with difficulty at first, be capable of living at the body heat; and I go so far as to suggest that it might be best cultivated at very low temperatures.

In this paper I have endeavoured to add to the reasons for believing that rheumatoid arthritis is a specific disease, that it may have a relationship to rheumatic fever or possibly require that disease as an antecedent; and I believe that the knowledge that these two diseases are absent from the tropics may give a clue to their etiology, but especially to the etiology of rheumatoid arthritis. Finally, I must mention that Dr. Leigh Canney[8] writes of Egypt as providing an almost certain cure for rheumatoid arthritis. Egypt is not in the tropics, but in some parts its climate is somewhat similar to that of the tropics, and I suggest that many cases of rheumatoid arthritis would be benefited by a stay in the tropics.

Since writing the above there has appeared in the *Indian Medical Gazette* of January, 1915, the Review of a Year's Medico-legal Work in the Calcutta Morgue (1913). 281 cases were examined. Under the heading of disease of heart and blood-vessels the following figures are given:—

	Endocarditis and endarteritis.	Atheroma.
Aortic valve...	Nil.	44
Mitral valve	,,	0
Thoracic aorta	,,	45
Pulmonary artery	,,	1
Coronary artery ...	,,	1

	Aortic valve.	Mitral valve.	Thoracic aorta, first part.
Stenosis ...	Nil.	Nil.	Nil.
Vegetations	,,	,,	,,
Ulceration	,,	,,	,,
Aneurysm	,,	,,	2

Ipoh, Perak, Federated Malay States.

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[6] Münchener Medizinische Wochenschrift, Nov. 11th, 1913.

[7] Thiele and Embleton: THE LANCET, Jan. 25th, 1913.

[8] Brit. Med. Jour., Sept. 27th, 1913.

TUBERCULOSIS SCHEME FOR PLYMOUTH.—The sanitary committee of the Plymouth borough council has recommended a tuberculosis scheme for the town, to include the erection of pavilions at Mount Gold Hospital, providing accommodation for 52 patients, and the acquisition of 42 beds at various sanatorium institutions and 4 beds at general hospitals for cases necessitating surgical treatment. The cost of the undertaking will involve an annual expenditure of £8496.

A CASE OF LANDRY'S PARALYSIS.

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THE following case was admitted to the Rochdale Infirmary in August, 1912, under the care of Dr. D. Richmond, honorary medical officer to the hospital, to whom I desire to express my thanks for permission to investigate the pathology of the case and publish the notes.

The subject of this report was a robust, athletic young man, 18 years of age, who had gained considerable repute as a weight-lifter and swimmer, and who had never suffered from any illness since childhood. He was a teetotaler and had never contracted any venereal disease. He had complained of transient attacks of severe pain in the lumbo-sacral region for some seven weeks previous to the onset of the paralysis, which he attributed to stooping at his work in the mill. Some weeks before the onset he had been in camps in the Isle of Man and had there been repeatedly wet through.

History of present illness.—The patient noticed whilst out walking with some friends on Sunday afternoon, August 26th, 1912, that his left leg began to give way. It grew rapidly worse, and he had considerable difficulty in reaching home owing to increasing weakness of both legs. After having tea he attempted to go out again, but only succeeded in getting about 200 yards away when he had to give up. He was assisted home and put to bed. He had a good night and slept well, but awoke to find he was quite unable to move either leg. On pushing them over the side of the bed and attempting to stand up he fell to the ground and had to be lifted into bed. Later in the day he was seen by his doctor, who advised removal to hospital, where he was admitted at 5.30 P.M. (August 27th).

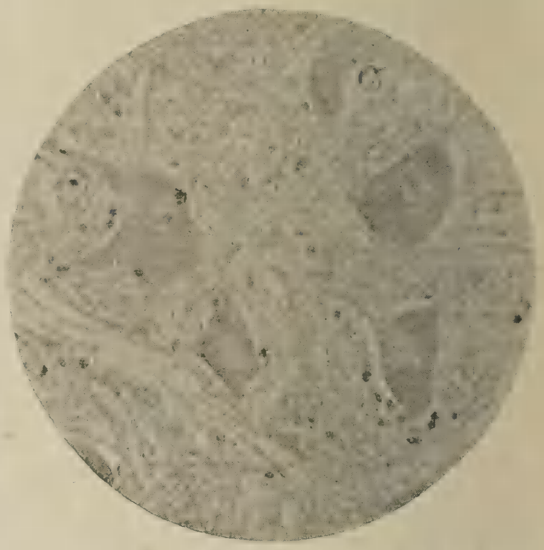
Condition on admission (24 hours after onset).—Besides the paralysis he complained of a tingling sensation in both feet and abdominal pain, somewhat of a "girdle" type, in the region of the lower costal margin. His appearance was that of a healthy muscular young man and his mind was quite clear. Temperature 99° F.; pulse 76 per minute, regular, strong, and good tension. (*a*) *Muscular system.*—Complete flaccid paraplegia—no voluntary movement even at the hip-joint, and apparently no muscle of either leg spared. Slight weakness of the hand-grasp, but no weakness at the shoulder. Practically no abdominal respiratory movements. No tenderness or wasting of the affected muscles. (*b*) *Sensation.*—Tactile sensation (tested by a wisp of cotton-wool) normal except for slight impairment on the soles of the feet. Sensation of pain, heat, and cold normal. (*c*) *Reflexes.*—Superficial and deep reflexes absent except the cremasteric, which gave slight response (abdominal reflexes absent). Organic reflexes normal. No deformity of spine or tenderness at any point. Special senses and cranial nerves normal. Respiratory and cardiovascular systems and urine normal, although respiration was somewhat feeble. The spleen was not palpable.

Progress of the disease.—August 28th: The hand-grasp on both sides rapidly became weaker. Retention of urine throughout the day, necessitating the use of a catheter at night. (This was thought to be due to the weakness of the abdominal muscles.) August 29th: The difficulty in breathing caused discomfort, and the dyspnœa became more pronounced during the day. He was now unable to move the fingers, and both arms were much weaker. The movements at shoulder- and elbow-joints had become very limited, especially the latter. He passed urine freely without any difficulty. August 30th: Respiration became much embarrassed and purely diaphragmatic in type. There was almost complete paralysis of both arms. No retention of urine. August 31st: The arms had now become flaccid and totally paralysed. Respiration was even more laboured, causing some cyanosis. Dysphagia and slight difficulty in protruding the tongue were experienced during the day. Some paresis of neck muscles seen for the first time, but eye muscles unaffected. At night he complained of "feeling funny in the head," and of "saying things he did not intend to." Sept. 1st: During the early hours of the morning the dyspnœa became steadily worse and he died of asphyxia at 6 A.M.—i.e., 5½ days after onset.

Necropsy.—Unfortunately permission was only granted to examine the spinal cord. This, however, was removed with as much of the spinal nerves as possible. The spinal cord was of firm consistency throughout, and exhibited no macroscopic change except well-marked general vascular engorgement. After hardening, portions were removed from the cervical, mid-dorsal, and lumbar regions, and also pieces of the nerve roots and cauda equina for histological examination.

Histological examination.—After cutting sections of the various regions of the spinal cord and nerves they were stained by the following methods: Nissl's toluidin blue, Marchi, Weigert, Van Gieson, and Bielschowsky.

Spinal cord.—At first sight the changes were not at all obvious, being confined to the motor cells. The majority of these were seen to be swollen and rounded rather than angular, retaining fewer processes, and they stained badly by Nissl's method. (See figure.) There was almost complete absence of any chromatin granules, the protoplasm appearing homogeneous except in a few instances where some granules remained at the periphery of the cell. In many of the cells no nucleus was to be found, in others the nucleus was ill-defined owing to its inability to retain the stain and was placed excentrically, whilst in a very few the nucleus was only slightly displaced from the centre of the cell, but was swollen and badly stained although its excentric nucleolus was generally deeply stained. These changes were seen in the multipolar cells of the anterior and posterior cornua and Clarke's column, and the changes appeared to be quite as well marked in the cervical as in the lumbar region. There was no proliferation of the neuroglial cells. The vessels in both the grey and white matter were distended with blood, but no hæmorrhages or perivascular infiltration were seen. There was no cellular infiltration of grey matter or meninges as seen in poliomyelitis. Marchi's stain failed to demonstrate any degeneration in the nerve fibres of the cord.



Section from a case of Landry's paralysis showing cells of anterior cornu.

Nerve roots and nerves of cauda equina.—No pathological change could be found in any of the numerous longitudinal and transverse sections of the nerve roots and nerves of the cauda equina which were examined. Staining by the usual methods for demonstrating the presence of micro-organisms failed to reveal any.

Remarks.—Until the pathology of Landry's paralysis is definitely established and universally accepted it appears to be one's duty to make, as far as possible, a full histological examination of the nervous system in all cases of acute ascending paralysis.

Since Landry's[1] paper was written in 1859 improved methods of staining nervous tissues have shown that cases of poliomyelitis and peripheral neuritis can produce a clinical picture practically identical with his case; and we shall never know whether his case was not one of these conditions. Ross and Judson Bury[2] were probably the first to suggest that Landry's paralysis was possibly a type of peripheral neuritis, and since the publication of their treatise many have recorded cases of acute ascending paralysis in which the pathological changes were those of a polyneuritis. Recently Pfeiffer[3] has published a full clinical and pathological report of such a case, and states that "it seems most probable that the pathology of this condition (Landry's paralysis) *per se* is to be looked for in the peripheral nervous system." Many writers have shown that acute poliomyelitis may show symptoms of an "ascending paralysis," and Harbitz and Scheel[4] have stated that many cases published as Landry's paralysis are really severe forms of poliomyelitis.

Nevertheless Buzzard[5] and Williamson[6] maintain that there is a distinct morbid condition worthy of the name Landry's paralysis. Buzzard[5] describes three cases, and in each a histological examination of the nervous system revealed an identical morbid change. The morbid change, and this only a slight one, was confined to the multipolar nerve cells of Clarke's column and the anterior and posterior cornua; there being a pericentral chromatolysis and in some cases excentration of the nucleus. No cellular infiltration of the vessels or white matter occurred, and no change was found in the peripheral nerves except the fine droplets of fat seen after staining by Marchi's method. This latter appearance Buzzard considers of slight importance, since he has seen it in all sorts of toxic conditions irrespective of paralysis.

The condition found in my own case showed an almost identical state of affairs. Although I should have preferred to examine the peripheral nerves more completely, it is probable that some indication of neuritis would have been found by the examination of the nerve roots and cauda equina, if it existed. Similar pathological changes have been reported in cases of acute ascending paralysis by Sheppard and Walker Hall,[7] Courmont and Bonne,[8] and others.

There is still considerable controversy about the pathology of Landry's paralysis, and on reading many of the published cases one is impressed with the chaotic state of the literature concerning this subject. This appears to be due mainly to two factors: in the first place Landry was unable with the methods of staining at his disposal to find any morbid changes, and secondly, the unfortunate alternative name, "acute ascending paralysis," seems to be responsible for the publication of many cases of poliomyelitis and polyneuritis as instances of Landry's paralysis. As we can never ascertain with certainty the actual disease from which Landry's own cases suffered, it would appear more satisfactory only to classify those cases of acute ascending paralysis as Landry's paralysis which do not show histological changes which can be identified as those of poliomyelitis, polyneuritis, &c. If the cases left after such a process of elimination were submitted to a full examination it seems probable that the present confusion would in a short time be remedied, and the pathology of the condition universally accepted. No useful purpose can be served by classing all cases of acute ascending paralysis as Landry's paralysis regardless of the pathological changes, and the sooner the alternative name for Landry's paralysis becomes obsolete the earlier will the point of controversy be decided.

I do not intend to discuss the clinical diagnosis of this disease, as this most difficult task has been considered very fully by other writers.

Summary.—1. We shall never know the precise pathological changes in Landry's cases. 2. Several nervous diseases can produce an acute ascending paralysis. 3. There is good reason to suppose that there is a distinct morbid condition causing a train of symptoms similar to those described by Landry and worthy of the name "Landry's paralysis." 4. There is no advantage in retaining the alternative name "acute ascending paralysis," and the name "Landry's paralysis" should be strictly reserved for a special type of ascending paralysis which does not show the morbid changes of poliomyelitis, polyneuritis, &c.

Manchester.

ON THE GENESIS OF CONSTITUTIONAL GASTROPTOSIS.

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Introduction.

As a preliminary to the discussion of this question we give a brief description of two out of several cases which have come under our observation.

CASE 1.—A female, aged 43 years; tall, thin, complexion rather pale, hair quite white; childhood healthy; in fact, clinical history negative until five or six years ago, when she began to complain of backache. This occurred after a long spell of strenuous nursing with much lifting of patients. A palpable right kidney was found. Increasing uneasiness and discomfort after meals induced her medical attendant to suggest a bismuth meal. There had been no sickness. The measurements of the chest and abdomen were: (1) Minimum circumference of the abdomen between inspiration and respiration, 26 inches; (2) distance from the level of the upper edge of the clavicles and symphysis pubis, 21 inches; (3) distance from the sixth dorsal spine to the level of the iliac crest, 8 inches; and (4) circumference at the level of the nipple (mean), 28·75 inches.

$$\text{First enteroptotic index } \frac{21 \times 100}{26} = 80$$

$$\text{Second} \quad ,, \quad ,, \quad \frac{26}{8} = 3{\cdot}25$$

$$\text{Relations of girth} \quad \frac{28{\cdot}75}{26} = 1{\cdot}1$$

Two ounces of bismuth subcarbonate well mixed with 10 ounces of bread and milk were administered, and a radiogram, with the patient lying on the couch, was taken after 20 minutes. In the diagram the depth of the lesser curvature, even in the recumbent position, lies at the level of the umbilicus and iliac crest, whilst the lower edge of the greater curvature closely approximates the pelvic brim. On the screen, the antrum was small but active; the sinus or vestibule lay in the ascending loop. The pylorus and cap were low, and the whole stomach resembled a tube of uniform calibre. Later it was seen that the transverse colon skirted the pelvic brim, the hepatic and splenic flexures were little if at all displaced, and the liver dulness was normal. The muscles of the abdominal wall exhibited apparently no relaxation of tone.

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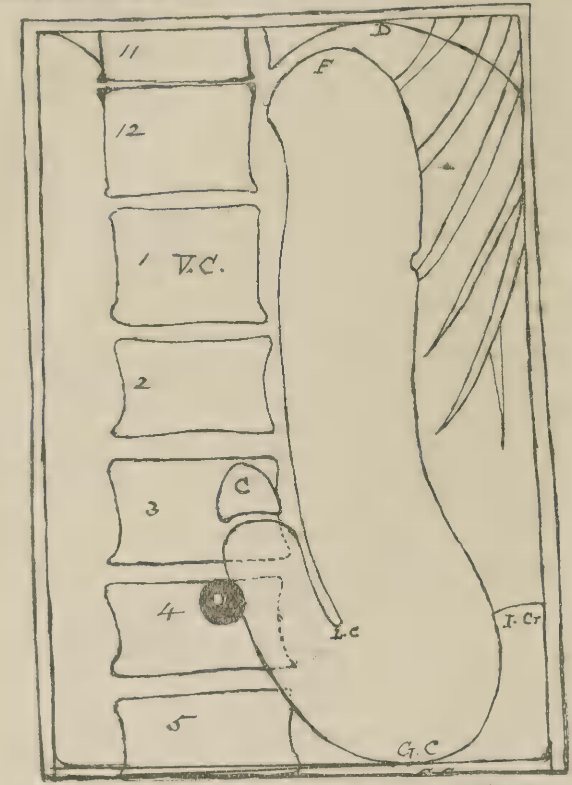
[1] Landry: Gazette Hebdomadaire de Médecine et de Chirurgie, 1859.
[2] Ross and Judson Bury: Treatise on Peripheral Neuritis.
[3] Pfeiffer, J. A. F.: Brain, 1912–13.
[4] Harbitz and Scheel: Journal of American Medical Association, 1907.
[5] Buzzard, E. F.: Brain, 1907.
[6] Williamson, R. T.: Diseases of the Spinal Cord.
[7] Sheppard and Walker Hall: Review of Neurology and Psychology, 1907.
[8] Courmont and Bonne: Archives de Neurologie, November, 1899.



CASE 1.—Patient in the recumbent position. D, Diaphragm. F, Fornix. GC, Greater curvature. LC, Lesser curvature. C, Cap of duodenum. VC, Vertebral column. ICr, Crest of ilium. A dark circle indicates the umbilicus.

CASE 2.—The patient, a female, aged 68 years, had suffered from indigestion for two or three years, previous to which she had not experienced any bad health. But about that time her husband became bedridden and required constant attention both day and night for nearly two years. She began to suffer from sickness two months ago; she had never had hæmatemesis. There were much wasting and occult blood in the stools. A test-meal showed the presence of hyperchlorhydria. There was pain in the lower part of the chest passing through to the back one hour after food, which was relieved by vomiting. Liver dulness was normal. There were epigastric tenderness, a palpable right kidney, and constipation. First enteroptotic index = 87; second enteroptotic index = 2·7 (*vide infra*).

In the recumbent position the stomach was cylindrical except in the lower portion, where it was somewhat dilated (secondary atony); the lesser curvature was at the level of the umbilicus, the greater curvature about 3 inches lower. After 24 hours the cæcum and colon were still uniformly filled with the opaque meal; the hepatic flexure was at the level of the crest of the ilium, the transverse colon over 2 inches below the umbilicus, the splenic flexure normal, and the iliac and pelvic colon dilated. For the notes of this case we are indebted to Dr. H. Morley Fletcher.

The Theories of Origin.

In total gastroptosis the stomach, possessing an even diameter, presents the appearance of a long U-shaped tube with the antrum and cap situated at the extremity of the ascending limb. It has no resemblance to the contour of the normal stomach, and has apparently reverted to a primitive type. The fornix is diminutive, the corpus elongated and slender. Its production has been ascribed to the effect of a vertical distension exercised by weight and gravity upon a relaxed and yielding muscular wall. To explain the deviation, sometimes trivial, from the normal time of gastric evacuation, it has been assumed that while peristalsis is normal or actually increased the tone or peristole alone is impaired. The idea is invalidated by the fact that uncomplicated examples exhibit no sign of the transverse dilatation which ensues when a normal stomach becomes atonic. We must therefore reject the opinions of authorities who refer its causation to a weakness of the muscular layers. No doubt atony may follow as the final result of hyperacidity and ulceration, but this loss of tone is secondary.

Since its presence is often associated with a diminished lower thoracic and upper abdominal capacity, it has been maintained that, at the age of puberty, when every organ is striving to assume the size and configuration of the adult form the lessened space existing between neighbouring viscera—liver, kidneys, spleen—by concentric pressure hinders the stomach from expanding in the horizontal direction. As a result it grows in length whilst preserving its volume unchanged. This idea, although attractive, does not survive careful examination.

The diminished upper abdominal cavity is generally due to the peculiarities of the paralytic or expiratory thorax. In the absence of early disease, which may materially modify the normal outlines of the lower thorax, this unusual form must be attributed to a *congenital* or *hereditary* origin. The chest is long and flat; the lowest costal arches closely approach the iliac crest. The line of the ribs forms an acute angle with the sternum, and there may be a floating tenth rib. Below the intermammary region there is, in reality, a general downward displacement of both soft and osseous tissues of the thorax—an altered direction of growth.

An attempt has been made to find a numerical expression for this change. The distance from the level of the upper margin of the clavicle to the symphysis pubis is divided by the minimal circumference of the abdomen and the fraction obtained is multiplied by 100. In women the figure is usually about 75, in men about 66. An index above 80 is often found in palpable right kidney and in the asthenic constitution. A more reliable index may perhaps be obtained by substituting for the denominator the distance between the level of the sixth dorsal spine and that of the crest of the ilium, and placing the minimal circumference of the abdomen as numerator. A normal figure gives 3, in the habitus asthenicus it may fall below 2. The upper part of the chest and the upper lobes of the lung are not really concerned. Also the relation of the intermammary circumference to the minimum abdominal is of interest.

Nevertheless, these figures, although instructive, are not of primary value. There are individuals with extreme indices who do not exhibit the slightest sign of enteroptosis. On the contrary, they may exhibit gastric hypertonus, with high hepatic and splenic flexures, non-palpable kidney, and normal liver dulness. Such a patient gave these numbers:—

(*a*) Clavicle to pubic symphysis...	22·5 inches.
(*b*) Minimal (mean) abdominal circumference	23·5 ,,
(*c*) Spine of the sixth dorsal to the level of the iliac crest	11 ,,

$$\text{First index (thoracico-abdominal)}\ \frac{22{\cdot}5 \times 100}{23{\cdot}5} = 95$$

$$\text{Second index (mid-thoracico-abdominal)}\ \frac{23{\cdot}5}{11} = 2{\cdot}1$$

Also many cases of gastric ulceration, chronic appendicitis, and habitual constipation possess abnormal indices and do not show a trace of gastroptosis. We have not yet seen the converse—that is, pure general gastroptosis with normal or supranormal indices; its occurrence, however, is indubitable.

The investigations of Professor A. Keith[1] and Professor C. S. Sherrington[2] have shown that the support of the abdominal organs is largely a question of the integrity of reflex arcs and abdominal muscles, the length of visceral bands and mesenteries playing a part of secondary importance only. In the dead subject, when erect, removal of the abdominal muscles induces a degree of ptosis far beyond any displacement observed during life. The tonic contraction of these muscles—recti, obliqui, and transversi—which occurs on standing, is evoked by a reflex the afferent end organs of which lie in the profuse terminations of the peritoneal nerves, including the Pacinian bodies. A failure or weakness of this reflex has been assigned as a cause of Glénard's disease. Keith has also drawn attention to the occurrence of a quasi-inflammatory process in the peritoneum between the third and fifth months of intra-uterine life. This seems to be a necessary expedient for the attainment of the upright position.[3] The result is fixation of the mesenteries to the spine, the ascending colon to the kidney, the back of the cæcum to the abdominal wall, and the terminal ileum to the iliac fossa. One of the objects in view is the prevention of twists and obstructions of the canal.

In the constitutional gastroptosis now under consideration the abdominal muscles are often firm and tense in comparison with their condition in secondary splanchno-ptosis. We cannot, therefore, attribute the descent of the gastric viscus to an acquired laxity of the abdominal wall. The genesis is to be ascribed to the existence of prolonged attachments due to a deficient development of the embryonal adhesive processes already mentioned. This defect will be reinforced by the presence of a narrow upper abdominal opening, by downward displacement of the diaphragm, and by certain osseous changes which take place at the age of puberty. It is, in fact, a partial indication of a general innate or embryonal anomaly, in which an aberrant configuration of the chest, elongated ligamentous bands of the abdominal viscera, prolapse of the stomach, liver, kidneys, terminal ileum, cæcum and colic flexures may one or all participate. Naturally the picture is often incomplete, not only as regards the number of the factors involved, but also in the degree. The relations of the neuromuscular and nodal tissue[4] (myenteric plexus) and of imperfections in the maternal internal secretions to this hereditary error present interesting problems for the clinician and pathologist.

Individuals of this habit, more especially men, often exhibit little or no digestive disturbances. There may be some gastric delay, with a tendency to diffuse habitual constipation associated with a liability, above the average, to impairment of health under conditions of strain. The two cases described in the introduction illustrate the dangers of continuous abdominal stress. This may lead to relaxation of these muscles, increased prolapse, and to gastric difficulties followed by hyperacidity, ulceration, and chronic gastritis. The acquired inter-adjustment of years is dissolved.

As long as reasonable care is taken in the way of food, exercise, and mental activity no evil effects may arise, and life may be prolonged even beyond the normal span. A prudent protected mode of living is generally instinctively chosen. In the case of the individual, however, with feeble and unstable nervous organisation, gastric neurasthenia, intestinal stasis, and toxæmia with colitis may supervene and become severe and chronic.

Several secondary causes, contributory to the full evolution of the type, may arise during childhood; these are tuberculosis, thymo-lymphatism with incoördination of the internal secretions, and grave attacks of the infectious fevers. Tuberculosis of the lung, even if old and obsolete, may have increased the erratic development of the chest by implication of the diaphragm; hypertrophy of the thymus may produce premature ossification of the costal cartilages; while the incidence of serious attacks of measles, diphtheria, pertussis, and scarlet fever may induce general relaxation of muscular tone, favour the development of tuberculosis, and may leave indelible marks on the future metabolic processes of the whole organism.

SOME POINTS IN THE CIRCULATORY SYSTEM IN ANKYLOSTOMIASIS:

A NEW EXPLANATION FOR THE MURMURS.

By ABD EL AZIZ ISMAIL, M.R.C.P. LOND.,
D.P.H. LOND., D.T.M. & H. CANTAB.

THE hook-worm is responsible for Egyptian chlorosis, which affects from 6 to 15 per cent. of the adult population of the country. Even in a crowded out-patient room variations in the reserve force of the heart are striking. Three stages seem to stand out. Further observations have convinced me that these are quite distinct, and that the majority of patients present one stage or the other.

Description of Typical Cases.

The following is a description of typical cases in the various stages.

Stage I.

Complaint on admission.—Breathlessness, dyspnœa, palpitation on exertion, throbbing of the veins of the neck, and epigastric pulsation.

Physical signs: arteries, heart, and chest.—The apex beat is distinct in the fifth space inside the nipple line, often quite an inch. There are pulsation in the second and third left intercostal spaces, epigastric pulsation, and arterial throbbing in the neck. The deep cardiac dulness is unaffected or slightly diminished. The chest is hyperresonant The circumference at the fourth interspace is 86–92 cm.; this is an average increase of 8 cm., the difference between full inspiration and expiration being almost one and a half times the normal. No less than 60 per cent. show a systolic murmur at all the orifices, loudest at the apex or base, specially the second to the third left costal cartilage. In this connexion the basal murmurs were more related to the degree of anæmia than the apical, and often in the progress of the case the apical heart sounds became clear while the pulmonary murmur persisted. The second sound at the pulmonary area was accentuated or doubled in four-fifths of the cases.

Whenever the anæmia is under 40 per cent. the *bruit de diable* is almost sure to be present by listening over the jugular bulb. It is the only murmur that has a distinct relation to the degree of anæmia. Pulsation of the jugular often exists, and the rise in the tissues covering the vein will be found to correspond with a distinct *a* wave in the jugular tracing, which is normal. The *v* wave is not abnormally marked. No ventricular type of curve was seen.

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[1] Keith: THE LANCET, vol. i., 1903.

[2] Sherrington: The Integrative Action of the Nervous System.

Keith: Human Embryology and Morphology, third edition, p. 267.

[4] Keith: British Journal of Surgery, April, 1915, p. 648.

At rest the pulse is usually 80–100, with an average of 92 per minute, but some 5 per cent. show 60–72. The systolic blood pressure is 110–130, and the diastolic 70–100 mm. Hg.

State of other organs and the reserve force of the heart.—At this stage the patient is fairly nourished and with a yellow tinge in the conjunctiva. There is no dropsy, no enlarged liver, and the amount of urine, which may be of low specific gravity, is normal. On walking 100 metres the pulse-rate rises 5–12 per minute, and the respirations rise from an average of 22–24. Walking on level ground does not seem exhausting. I have known patients walk for miles with little rest before coming to the hospital out-patient room. The majority were able to attend to their agricultural duties, involving manual labour, till three to seven days before admission. One porter at a railway station was attending to his duties two days previously. On running, however, for 100 yards dyspnœa becomes evident and the respirations rise over 30, the pulse-rate being 110–120 per minute. If the exertion is continued there is a further rise in the pulse-rate up to 130, but the respirations with more exertion may be 60 per minute. The patient then feels giddy and breathless, and is forced to sit or lie down. Some suffer more from the throbbing of the arteries in the neck, which is then extreme, and also from palpitation. In none of this group could a history of cardiac pain or attacks of angina be obtained. Certainly none were observed in the hospital. Going upstairs is more exhausting than running.

Areas of hyperalgesia were looked for in the left mammary region, the left arm, left sterno-mastoid and trapezius, and in none were they present. Some 5 per cent. showed, however, slight tenderness on the ulnar side of the left forearm, of which the patient was unaware previously. No hallucinations or attacks of depression could be made out if pellagra, which so often complicates the disease, be excluded.

This description refers to the majority of cases of this group. But some will show absence of one sign or several but still have to be so grouped, the common link being *the state of the heart and its reserve force*, which is slightly affected.

Stage II.

While the out-patient room is daily crowded with patients in the first stage, cases in the second stage are comparatively rare. When 400 cases had been examined the proportions were: Stage I., 85 per cent.; Stage II., 4 per cent.; and Stage III., 11 per cent.

Complaint on admission.—In addition to the symptoms described under Type I. a history of anginal-like attacks can be obtained. A common story of a patient is this: "On the slightest exertion, especially after meals, a devil takes hold of my throat and chest; I cannot breathe, I imagine my end has approached, but I cannot say the last word of my prayers. This lasts a few minutes." In some cases which I have actually observed during the attack it was followed by an area of tenderness in the left mammary region and the ulnar side of the left arm and forearm.

Physical signs.—The apex beat is now in the nipple line or slightly outside it. The deep cardiac dulness is definitely increased at the fourth interspace. The apex beat is of a heaving nature; the murmurs are more distinct than in Stage I., though of the same character. The chest circumference at the same level measures 96–102 cm. The pulse rate at rest is 105–115 per minute, the respirations are 25–35, and the blood pressure is 140–160 mm. Hg. The sphygmographic tracing shows the characteristics of high-tension pulse.

The skin over the left breast is very sensitive and touching the hairs may be painful, most marked at the second intercostal space. The left arm, especially the radial side, is also tender. There are no such areas at the back nor on touching the muscles in the neck. When the patient is asked to walk 50 to 100 metres the pulse rises to 130 and the respirations to 60, and he has to sit down breathless and giddy. There are no œdema and no enlarged liver; the urine is free of albumin. Attacks of angina were observed in the hospital. They are neither severe nor frequent in any one case, the pain radiating most commonly to the ulnar side of the left forearm.

Stage III.

The patient is pale and dropsical, more commonly a child. He is unable to make any exertion; sometimes sitting or standing up causes breathlessness. The pulse is 120–130 per minute, small and readily compressible; the blood pressure is either 100–110 or 120–140 mm.Hg. The apex beat is outside the nipple line, with an increased area of deep cardiac dulness, but in some no such increase could be made out, and the apex beat, which is hardly felt, lies 1 cm. or more inside the nipple line. Cardiac murmurs are now no longer roaring, and in a third of the cases are absent at the apex and slight at the pulmonary area. A murmur at the jugular bulb was absent in 9 cases out of 20. There are an enlarged liver and œdema of the lungs. The urine may contain albumin, sometimes merely a trace. Cases that showed casts on examination were excluded. Areas of hyperalgesia were present, but not marked as in Type II. No attacks of angina observed, but in 20 per cent. of the cases a history of such could be obtained.

How the Circulation is Carried Out.

Efficient circulation normally depends on—(1) the pressure of the blood in the capillaries; (2) the velocity of the blood in the same; (3) its volume; and (4) its quality.

In anæmia the volume of blood is increased. This volume has to be accommodated in the circulatory system. The arteries, arterioles, and capillaries dilate, evidenced by (1) the size of the radials, (2) capillary pulsation, and (3) the free flow of blood from the pricked finger. With a blood pressure not above the normal the smaller arteries dilate more than the larger ones.

The chest enlarges and the suction action of the thorax is increased. This is more marked in chronic than in acute cases. The condition is one of hypertrophy of the lungs, not emphysema. The breath sounds are not diminished and expiration is not prolonged. The amplitude of respiration is increased. Bronchitis is a very rare complication. Post mortem there are no signs of emphysema. The pulmonary vessels dilate, and the right side of the heart being more extensible than the left is also engorged. Enough evidence is shown in the accentuated or doubled second sound at the pulmonary area.

The output of the left ventricle, judging from its size and the difference between systolic and diastolic blood pressure, is not increased, but the rate of contraction is, and the output per minute must be above the normal. With an arterial pressure almost normal the heart must be overtaxed, but as can be seen clearly from the symptoms there is no depression of tonicity in 8 cases out of 10. The presence of symptoms such as breathlessness, palpitation, &c., on exertion is alone not evidence of dilatation but of diminution in the field of cardiac response, and, in other words, partial exhaustion of the reserve force of the heart. The poor quality of the blood must play a part in the production of these symptoms on exertion.

With the continuance of the anæmia the arterioles begin to contract, possibly due to stimulation of the vaso-motor centre, and Type I., already described, drifts into Stage II. The contraction occurs at first in temporary attacks, later becoming permanent, the blood pressure then rises, and the veins become relaxed though not engorged. Further extra work is thrown on the left ventricle, with marked embarrassment evidenced by areas of hyperalgesia, attacks of angina, and physical signs of cardiac dilatation. The heart is able to maintain an efficient arterial pressure in the recumbent position, and evidence of non-efficiency of the circulation is not apparent in other organs. Stage II. drifts to Stage III., where the arterial pressure can be no longer maintained and severe effects follow. Type II. is rare and occurs in cases exposed to prolonged and especially recurrent infections. The same patient may have been to the hospital on two or more occasions before. When heart failure supervenes on this type the blood pressure may be kept up above normal for some time, and there is always the previous history of anginal attacks, but when failure follows Stage I. the blood pressure is not raised and there is no such history of cardiac pains. Dropsy is extensive and the hæmoglobin is generally very low (10–15 per cent.). Such cases are more common in children.

Post mortem the two types of hearts—(1) the hypertrophied fatty left ventricle, and (2) the small fatty left ventricle—are too well known.

The Origin of the Mitral Murmurs.

Many hypotheses have been offered. Before discussing a new one let us consider the factors that operate in preventing dilatation of the ventricles: 1. Tonicity of the heart muscle. This is most important. 2. The columnæ carneæ. The first and second classes of these are well-developed in the right ventricle. 3. The valves of the tricuspid orifice are rarely competent to close the opening (John Hunter). Mayo declared that the tricuspid valves never perfectly close the orifice. The pressure in the right ventricle cannot experimentally be much raised as the fluid leaks through the orifice. In the case of the left side the columnæ carneæ are very poorly developed, and the mitral valves are competent to close the orifice.

The left ventricle was shown to be overtaxed in cases of Type I., and with a poor blood-supply it is apt to dilate. This was shown not to be the case. Evidently some mechanism must be in operation if the wall does not yield. What is this safety mechanism? Normally the left ventricle is already partly filled before auricular systole, which is followed by closure of the mitral orifice, and before the ventricle has thoroughly set into systole. The vibration of the valves gives rise to the first sound. In anæmia the ventricle was shown to fill well during diastole and with the onset of systole is probably over-distended. The papillary muscles contract later than the rest of the ventricle, and their object is to prevent retroversion of the valve flaps into the auricle.

My hypothesis is this: The contraction of the papillary muscles if continued further will increase the convexity of the auricular surface of the flaps, which would be supported by the column of blood in the ventricle; further contraction would pull the valve edges into the ventricle, the latter at the same time separating. The chordæ tendineæ from each papillary muscle to both valves tend to prevent undue separation. The origin of the papillary muscles from the anterior and posterior walls, the two contractile walls of the left ventricle, may be a means of regulating their action according to the degree of distension and integrity of the muscle. A chink would be created between the valves—some blood would regurgitate, the overtension in the ventricle released, and possibly a more efficient contraction continued, but a murmur systolic in time results.

Some facts favour this safety-valve hypothesis: 1. The murmur is best heard or only heard in the recumbent position. In this the heart-rate is slowed, the diastolic period increased, the ventricle overfilled, and the mechanism is more needed. With the short diastoles of exercise the murmur often disappears. 2. The murmur resembles one of mitral stenosis in its conduction being localised to the apex or internal to it; a thrill is sometimes felt. Separation of the valves, as was shown, can at best be but slight, and the conditions simulating stenosis are present. The edges of the valves being pulled inside the ventricle the murmur is essentially intraventricular, and the chance of its conduction with the current of blood is slight. The character of the murmur differs from that of stenosis, for the surface of the normal valves over which the blood flows is also different from that in cases of stenosis. 3. The presence of (?) doubled first sound at the mitral is in a quarter of the cases apparently due to vibration of the mitral cusps consequent on overaction of the papillary muscle. When the condition advances a murmur is produced, and a case often passes from one stage to another and back again as conditions get better or worse. 4. Post mortem the papillary muscles taken from cases in the last stages are found to be very fatty, but undoubtedly increased in bulk out of proportion to the hypertrophy of the left ventricle. This is more apparent in the fresh state than in the stained condition. The increase in the size and number of fibres points to previous hypertrophy and past overaction. I had no opportunity of examining these muscles in cases in the earlier stages. 5. A similar murmur is heard in Graves's disease (before actual dilatation has set in), and in overstress of the heart from exercise when there is no sign of increase in the heart chambers. In these and other circumstances conditions obtain similar to those of anæmia which call for the safety-valve mechanism: (1) Over-tension in the left ventricle, either absolute or compared to the weak condition of the muscle; and (2) slight diminution of the reserve force of the heart, the tonus being hardly affected.

As in all protective reflex phenomena, the mechanism comes into play consequent on other sources of stimulation or an irritable nervous system. Hence the functional murmurs in the excitable hearts of the young; but even here over-distension of the left ventricle has been suggested by Mackenzie as possibly playing a part.

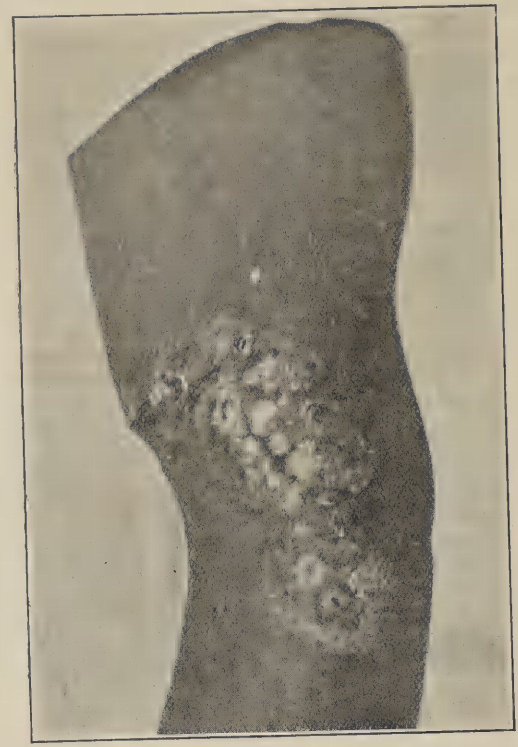
As regards the murmurs present in the area of the base, more than one kind have to be distinguished. 1. In rare cases an artery enlarges in the second and third spaces one inch outside the sternum, and pressure on it by the stethoscope causes a murmur. A similar one was described in arterio-sclerosis by Berghe. 2. A meso-systolic murmur roaring with forced expiration and varying with pressure. Pulsation, both systolic and diastolic, is often present in the same area. This is possibly due to a dilated pulmonary artery approaching the chest wall. 3. A murmur that has no relation to the respiration, or at least a very varied one, and may remain long after the apical murmur has disappeared. 4. A murmur having a definite relation to the mitral one and only disappearing with the disappearance of the latter or its conversion into a (?) first sound. I suggest that such a murmur is due to a slight kink that occurs experimentally in the aorta when the papillary muscles forcibly contract, pulling on the valves, as the fibrous ring to which the latter are attached is continuous with that into which the media of the aorta is inserted.

Bibliography.—1. Yandel Henderson: American Journal of Physiology, vol. xxiii., 1908-9. 2. James Mackenzie: Diseases of the Heart, third edition, p. 302. 3. Sansom: Diagnosis of Diseases of the Heart, 1892. 4 Roy and Adami: Philosophical Transactions, London, 1893. 5. Overstress of the Heart, Sir Clifford Allbutt: System of Medicine, Allbutt and Rolleston, vol. vi. 6. Merklen and Jean Heitz: Examen et Sémiotique du Cœur. 7. Mackenzie: Diseases of the Heart, p. 327.

Cairo.

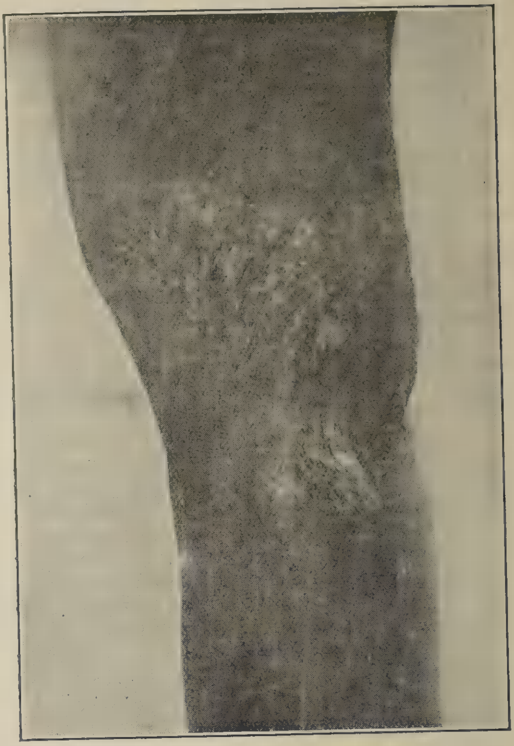
Reproductions of Photographs Illustrating Staff-Surgeon L. F. Cope's Note on a Case of Molluscum Contagiosum Cured by X Rays.

FIG. 1.



Condition of the arm before treatment with X rays.

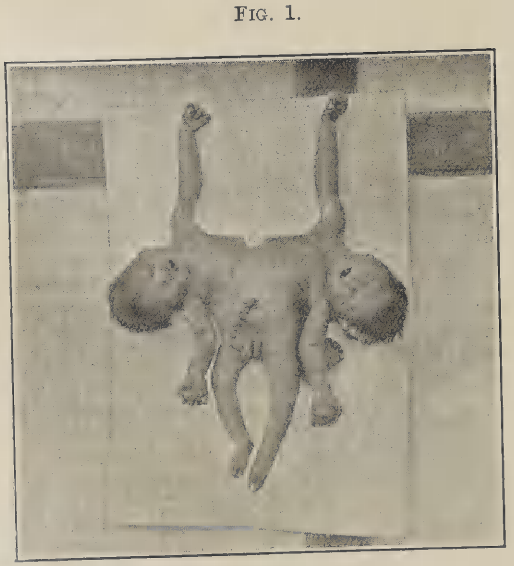
FIG. 2.



Condition fifteen months after treatment.

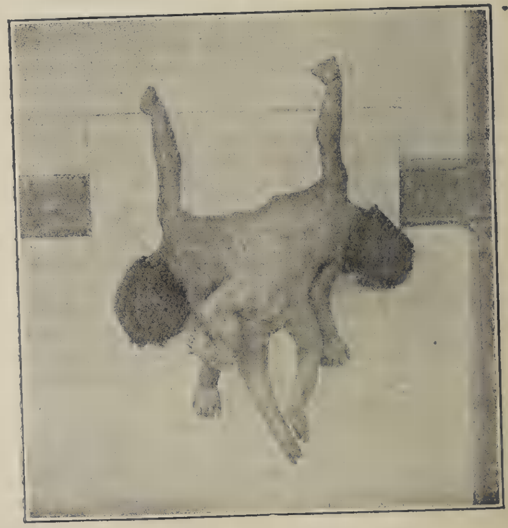
Reproductions of Photographs Illustrating Mr. J. R. Mackenzie-Jones's Account of a Double Monster.

FIG. 1.



Double monster: Viewed from the front.

FIG. 2.



Viewed from the back.

Clinical Notes:
MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF MOLLUSCUM CONTAGIOSUM CURED BY X RAYS.[1]

BY LIDBROOKE FRANK COPE, L.S.A.,
STAFF-SURGEON, R.N.

THE patient, a Krooman, was admitted to the Royal Naval Hospital, Simon's Town, with a group of little tumours situated just above the right elbow-joint. (Fig. 1.) Each tumour contained a soft central core from which there was an exudation consisting of serum, a few erythrocytes and cocci, together with the typical hard oval "molluscum bodies." In the occipital region he had a small hard tumour of the keloid type. The history was indefinite, the only information the patient could give being that he had noticed the place on his arm "for some time."

Treatment in the first instance consisted of fomentations with 20-grain doses of potassium iodide thrice daily, without any improvement whatever. After 10 days of this treatment it was decided to try the effect of X rays. The affected part was accordingly exposed to X rays for 10 minutes every other day. The condition at once began to improve, and at the end of the twelfth sitting had completely healed. The second photograph (Fig. 2) was taken 15 months later, and gives satisfactory evidence that the cure is permanent.

The chief points of interest in the case lie in the fact that in the pigmented skin of the negro it is not easy to see zones of inflammation, &c., such as give characteristic appearances to skin lesions in Europeans, and the rapidity with which the condition healed with X rays—a result quite in accord with those obtained by Norman Walker[2] and other dermatologists.

A DOUBLE MONSTER.

BY B. R. CHATTERTON, M.D. DUB., F.R.C.S. IREL.,
LIEUTENANT-COLONEL, I.M.S.

AT my request the following account of a double monster has been written by Mr. J. R. Mackenzie-Jones, I.M.S.

A Telin of village Fularia, P. S. Mirganj, gave birth to a double monster on April 9th, 1914. It was born alive and lived for three days, dying on April 12th.

A post-mortem examination was made on April 13th, when the creature was found to consist of twin fœtuses, united by their trunks and having two heads well covered with hair, four arms, and three legs, two in the front and one at the back with seven toes. The sex was female. There was one anus, near the leg at the back. (See Figs. 1 and 2.)

On opening the body the following were found and noted. Stomach, one and common; liver, common and obliquely extended from right to left; spleen, two; kidneys, two; bladder, one; intestines, common; sex (female), common; hearts, two; aorta, common; and lungs, four.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Localising Brain Symptoms as Early Events in Tuberculous Meningitis.—Demonstration of Cases and Specimens.

A MEETING of this section was held on May 28th, Mr. T. H. KELLOCK, the President, being in the chair.

Dr. C. O. HAWTHORNE read a short paper on Localising Brain Symptoms (Hemiplegia and Hemispasm) as early Events in Tuberculous Meningitis.

Dr. HAWTHORNE also showed a case of Hemiplegia in a girl aged 10 years, with sudden onset but without convulsions, and no evidence of visceral disease. There was a history of good health prior to April 4th. On that day the mother left the child sitting on a chair by the fireside, and when she returned shortly afterwards found her lying on the floor paralysed on the right side and unable to speak plainly. She did not observe anything in the nature of a fit or convulsion. When admitted to the hospital on April 8th the girl had right hemiplegia, was unable to talk plainly, and had a temperature of 103° F. Examination otherwise negative, and cerebro-spinal fluid apparently normal. The temperature fell to normal the next day, and the paralytic condition soon began to improve.

Dr. ERIC PRITCHARD exhibited the following cases: 1. A case of Cystic Lymphangioma in an infant, which he had shown to the section on Jan. 23rd, 1914, as one of persistent "caput succedaneum." Subsequent events proved that this view of its pathology was incorrect, and that the tumour was probably a congenital cystic hygroma or lymphangioma in an unusual situation. At the time the diagnosis was obscured by the fact that the tumour was the presenting part (left shoulder presentation) and that the contents of the cyst, which were drawn off by hypodermic needle, consisted of a blood-stained fluid like blood serum. The tumour had continued to increase in size *pari passu* with the growth of the infant. 2. A case of Polio-encephalomyelitis. The patient, a healthy boy aged 7 years, developed a squint and double vision on April 27th. He was brought to hospital on May 3rd, when he was examined, but no other lesion could be discovered. On May 8th the parents noticed weakness in the right arm and dragging of the right leg. On the 10th he was brought again to the hospital, and then complete palsy of the sixth left nerve was discovered. No nystagmus; discs normal; partial paralysis of the right twelfth nerve. Shoulder girdle: Some weakness of the right side. Arms: No wasting of arm and hand muscles, temperature of both the same; weakness of right arm and hand; grip poor on the right; the right thumb and fifth finger could be opposed only with difficulty; jerks +, more so on left side. Abdomen: Reflexes on left side active, absent in upper half on the right side; no wasting. Legs: No wasting; the right leg and foot colder than the left; weakness of muscles; knee-jerks active on the right, exaggerated on the left; no ankle clonus; ? extensor response on right, flexor on left. On the 14th the boy was admitted to hospital. New lesions were found to be present. Seventh nerve palsy (incomplete type) on the right side; eighth nerve affected; partial deafness; taste normal. Arms: No wasting; grip on the right side weaker than the left; jerks exaggerated on the right, active on the left; total inability to oppose thumb and fifth finger; marked dysdiadokokinesis on the right side. Abdomen: Reflexes absent on the right side. Legs: Weakness greater on the right side; the right colder than the left; knee-jerks, clonus on the right, exaggerated on the left; no ankle clonus; Babinski's sign on the right side, flexor response on the left. No spasticity. Incoördination in walking. No Rombergism. Sensation to light and painful touch on right leg and foot slightly diminished, otherwise normal.

Dr. H. THURSFIELD showed a child with Contraction of Limbs—a case for diagnosis. The child was aged 8 months, with asymmetry of head and chest. The thumbs were flexed into the palms of the hands, and the legs were flexed at the knee-joints and could not be fully extended. There was talipes of both feet. The patient was the fourth child, born at full term, the labour being natural. Three other children were alive. There had been no miscarriage. The mother had been quite healthy during pregnancy.

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[1] Published by permission of the Medical Director-General of the Navy.

[2] Medical Annual, 1906, et seq.

Dr. J. D. ROLLESTON showed a case of Ectrodactyly in a girl aged 3 years. The right upper arm and forearm were of the same size as the left, but the right hand was rudimentary. The right metacarpus was 2·5 cm. long by 4 cm. broad, the left 5·5 cm. by 6·5 cm. broad. The phalanges of the right hand were represented by five small tubercles; the thumb tubercle was the largest, being 9 mm. in length, and alone carried a nail, the little finger was 2 mm. long, and the second and third fingers only 1 mm. long. The thumb rudiment and, to a less extent, the other tubercles were movable at will; there was no trace of a scar. The left upper limb and both lower limbs were normal, and there were no other external deformities nor apparent visceral anomalies. Apart from the ectrodactyly the child was well developed. The parents and two other children in the family presented no deformity. The mother attributed the patient's deformity to having seen, during the fourth month of pregnancy, her eldest daughter catch her fingers in a mangle. The girl escaped with slight bruising of the fingers, and the mother did not anticipate the deformity of her child.

Dr. E. G. L. GOFFE showed a case of Syndactyly of the Left Hand with Constriction of the Right Forearm in a girl aged 4 years.

Dr. F. E. BATTEN and Dr. MILDRED A. JUKES showed a case of Amaurotic Family Idiocy (Waren Tay-Sachs Disease) in an infant, aged 11 months, born of Jewish parents at full term, and apparently normal at birth. Weakness of the arms and legs was soon observed, and at the age of three months the mother noticed that the child was blind. The child was the youngest of eight; one sister, similarly affected, died in infancy one year ago. The child shown was a well-nourished child, but feeble; she could not sit up without support. There was no rigidity; all reflexes were normal. The child took no notice of her surroundings, lay quietly in bed, and was not irritable. There was some perception of light, otherwise the child appeared to be blind. On examination of the fundi, the typical white patch was seen on the maculæ with a central, cherry-red spot. The cerebro-spinal fluid was normal. The Wassermann reaction was negative.

Dr. PHILIP FIGDOR exhibited a specimen of Pericarditis in Diphtheria. The patient, a boy aged 3 years, was admitted to hospital for laryngeal diphtheria on Nov. 30th, 1914. Tracheotomy was performed shortly after admission, with instant relief. On Dec. 14th the cardiac rhythm became irregular. On Jan. 11th, 1915, a faint systolic murmur was heard at the apex. On Feb. 27th the cardiac dulness was greatly increased in both directions, and a soft ventricular murmur was heard at the apex, in the axilla and pulmonary area, and there was occasional reduplication of the second sound. On March 1st the murmur was heard in all the areas, but best at the apex. The cardiac dulness was slightly decreased on the right. On March 5th the general condition of the patient was much worse; cyanosis was marked. The cardiac dulness was greatly increased in both directions, and a harsh, double murmur was heard in all the areas. A diagnosis of pericarditis was now made. On the 8th the cardiac dulness was considerably reduced. A mid-diastolic murmur was heard within the apex. By the 15th the cardiac dulness was again greatly enlarged, and death took place on the 23rd. Post mortem the parietal and visceral layers of the pericardium showed recent pericarditis. There were about 10 ounces of serous pericardial fluid. Mitral valve: Edges thickened and eroded. Aortic and pulmonary valves healthy. Left ventricle hypertrophied; right ventricle slightly hypertrophied. Great œdema of pericardium and tissues at root of neck, including the thymus. Lungs almost airless; no tubercle; no evidence of consolidation. Very little fluid in pleural cavity. Slight œdema of mesentery. Gall-bladder œdematous, walls being about one-third of an inch thick.

Dr. F. LANGMEAD showed a case of Hypopituitarism in a boy aged 19 years and 3 months. He was extremely obese, and his general development, mental and physical, resembled that of a boy of 11 or 12 years. The genitals were rudimentary. There was no hair on the face, but some in the suprapubic region. The breasts and general development were of the female character. The voice did not appear to have broken. The amount of urine passed varied between 104 and 260 ounces per diem. There was a corresponding polydipsia. The optic discs and fields of vision were normal. The blood pressure ranged between 110 and 130 mm. Hg. Sugar tolerance had not been tested adequately. The diagnosis was established by a skiagram of the pituitary fossa, which was seen to be minute, the anterior clinoid processes being greatly thickened.

ROYAL ACADEMY OF MEDICINE IN IRELAND.—The Section of Anatomy and Physiology of the Royal Academy of Medicine in Ireland met in Queen's College, Belfast, on May 28th. In the Anatomical Department Mr. P. T. Crymble showed a large number of skiagrams, stereoscopic views, and so on, and the new X ray equipment installed for use in the Department of Anatomy. Professor J. Symington exhibited casts of the cranial wall and of the brain and its membranes in the Museum of Human Anatomy. He also contributed a paper dealing with Some Additional Observations on the Estimation of the Degree of Brain Development from Endocranial Casts, and he gave a description of a new model to illustrate cranio-cerebral topography. In the Physiology Lecture Room Dr. J. A. Milroy read a paper on Some Applications of Electrolytic Reduction. Dr. J. E. McIlwaine read a communication on the Electrocardiographic Method of Estimating the Condition of the Heart Muscle. Dr. J. M. Gibson read a paper on Heart Block produced by Yohimbin and Quebrachin. Professor T. H. Milroy contributed a paper on the Action of Rennin, Professor W. H. Thompson on the Effect of Racemic Arginin on the Excretion of Creatinine and Creatine, and Professor B. J. Collingwood on Some Further Observations on a Urinary Acid Index. On May 29th the members of the section interested in physiology visited the Royal Victoria Hospital, Belfast, where Dr. McIlwaine showed the electrocardiograph and demonstrated its great usefulness in diagnosis and prognosis. This instrument has been in practical use for over a year and a half, and is the only one in Ireland.

NORTH STAFFORDSHIRE MEDICAL SOCIETY.—A meeting of this society was held on May 27th at the North Staffordshire Infirmary, when the following cases and specimens were shown among others. Dr. A. Gill and Dr. A. Hilton John: Transposition of the Viscera in a man aged 23 years.—Dr. S. King Alcock: A specimen of "Anguillula Aceti" in Urine.—Mr. E. E. Young: A man, aged 63, from whom the right half of the tongue was excised for Epithelioma on June 28th, 1912, the glands in the anterior triangle being removed on July 15th, 1912; apparent cure.—Mr. Harold Hartley: (1) Living case, Cancer of Tongue, operated upon; and (2) pathological specimen, Strangulation of the Undescended Testis.—Dr. A. R. Moody: A case of Miners' Nystagmus.—Dr. F. Shufflebotham: A case of Miners' Nystagmus aggravated by Incipient Cataract.—Mr. George A. Carter: Two cases of Nasal and Pharyngeal Syphilis, showing the result obtained by treatment with intravenous injection of "606," followed by intramuscular injections of mercury.—Mr. R. H. Dickson: Cases of Entropion and Trichiasis, showing results of treatment by Transplantation of Buccal Mucous Membrane.

THE annual meeting of the Medico-Psychological Association of Great Britain and Ireland has been fixed for July 22nd, and will be held in London.

BRIDGWATER INFIRMARY.—At a special meeting of the subscribers held recently to consider the serious financial condition of this institution it was stated that an extension of the infirmary was now being carried out at a cost of £6000, towards which sum £4000 had been taken from reserve funds, which meant a loss of £160 per annum in the income. The donations of workpeople had decreased yearly from £275 to about £42. It was eventually decided that in future a charge must be made for all patients—viz., for in-patients 3s. weekly and for out-patients 1s. weekly, patients under 14 years of age to be charged half that amount. Accidents would be admitted free as hitherto.

Reviews and Notices of Books.

Human Physiology.

By Professor LUIGI LUCIANI, Director of the Physiological Institute of the Royal University of Rome. Translated by FRANCES A. WELBY. With a Preface by J. N. LANGLEY, F.R.S., Professor of Physiology in the University of Cambridge. Vol. III.: Muscular and Nervous Systems. Edited by GORDON M. HOLMES, M.D. Dub. London: Macmillan and Co., Limited. 1915. Pp. 667. Price 18*s.* net.

VOL. I. of this work was reviewed in THE LANCET, July 1st, 1911, and Vol. II. on June 7th, 1913. This volume brings the subject matter up to 1913. In 1913 Professor Luciani received a commemorative medal and an album containing the autographs of almost all the world's most eminent physiologists as a mark of his colleagues' esteem and as a tribute to the excellent and brilliant researches carried out by himself during a period of at least four decades. Dr. Gordon Holmes acts as editor in place of Dr. M. Camis, who is unable to act again in this capacity. At the outset let us say that Miss Welby has done her part most efficiently. The translation runs smoothly and does her much credit.

The first three chapters deal with the Muscular Systems. Over 90 pages are devoted to the general physiology of muscle. In this, as in all succeeding chapters, the historical touches in the text are peculiarly valuable. They show the author's erudition, his wide knowledge of the subject, and give that indefinable setting to the actual facts which raise this work to something more than a mere text-book of bald facts and current theories. Moreover, the critical acumen of the author reveals itself in almost every chapter. The matter in the chapter on muscle follows more or less conventional lines, but there are many details and acute observations incorporated which are not found in the ordinary text-books. Since 1871 Luciani has always had his own views as to the relaxation phase of a muscular contraction, skeletal or cardiac. Those interested will find his position elucidated in the text. Rigor mortis is more than a mere coagulation process. In mammals, at least, it is due to loss of oxygenation owing to arrest of the vascular circulation, so that according to Winterstein it is an asphyxiation phenomenon. The little-known ergograph of Treves—little known or at least little used in this country—is fully described. An all too short description of Einthoven's string galvanometer is given. A figure of the instrument and electrocardiograms would have been more illuminating. Langley's "receptive" substances are mentioned in the bibliography, but little is said of them in the text. We heartily welcome the chapter on mechanics of locomotor apparatus (pp. 96–128), a subject all too much neglected and even omitted in some of our English text-books. It is a subject requiring distinct anatomical as well as physiological knowledge. Luciani has made ample use of the work of Braune and Fischer. He was conversant with this work in his Leipsic days. The work of Marey, Carlet, and the French school is also incorporated. Phonation and articulation are the subjects of Chapter III. (pp. 129–174). This chapter has been considerably abridged. It appears that while Grützner used carmine to determine the impression left by the tongue during the articulation of certain sounds, Luciani and Baglioni used cocoa powder.

The remaining part of the text deals with the Nervous System. First, the general physiology of the nervous system is considered (pp. 175–277); its structural elements, the theory of independent neurones and its opposite, that of continuity of neuro-fibrils. Both theories are carefully expounded, exemplified, and criticised; the laws, rate of conduction, and the diphasic character of a nerve impulse, excitation of a nerve, its metabolism and electro-motive phenomena, electrotonus, and allied subjects. Full justice is done to the results obtained by Golgi, Cajal, Nissl, Apáthy, Bethe, and others. The neurone theory, it is stated, "is not based on any conclusive evidence." It is known that a nerve requires a supply of oxygen to keep up its vitality. But no one has yet proved that the oxygen absorbed and the CO_2 given off depend directly upon the state of rest or activity of the nerve. It is because nerves have a low metabolism and specific differentiation that they represent a form of living protoplasm which is endowed with peculiarly high resistance to noxious influences. The motor end-plates lose their conductivity long before the nerve fibres themselves. The most striking demonstration of the vital resistance of nerve is its comparative freedom from fatigue. The discussion on degeneration and regeneration of nerves is interesting, and we are glad to see an excellent exposition of the elaborate and careful work of Perroncito, of Turin (1908), who used Cajal's photographic method. English surgeons who have sutured and "crossed" two different nerves do not seem to be mentioned, though the work of Purpura in the same sphere is given in detail. Nor is much said of the observations of Head, Rivers, and Sherren. Perhaps this is reserved for a later volume.

The fifth chapter deals with spinal cord and nerves (pp. 278–358). Due credit is given to Galen, and the story of Bell, Magendie, Johannes Müller, Panizza, Longet, and Claude Bernard in relation to the functions of the nerve roots is told effectively. Justice is also done to the epoch-marking work of Sherrington on reflexes and allied phenomena and to the compensatory action of the cerebral hemispheres, where there is loss of afferent control in animals with paralysed sensibility. Metamerism, segmental skin-fields and their overlaps, the physiological unit of cutaneous metamerism—the dermatome, myelomeres, and "facilitation" are all fully discussed. The author regards it as far from certain that the psychical functions are localised exclusively in the brain, and he gives his reasons (p. 311). As to the knee-jerk, its reflex nature was clearly brought out by Sciamanna in 1900, although it should be stated that its true reflex character is not universally admitted. In any case it faithfully follows the oscillations in spinal excitability, hence its clinical value as a very delicate physiological indicator of the tone of the nerve centres in general, and those of the cord in particular. The data as to "trophic nerves" are carefully collated and sifted. Independent nerves of this class do not exist—i.e., there are no special trophic nerves and centres entirely distinct from the sensory and motor. A short chapter (VI.) (pp. 359–379) suffices for the sympathetic system. Chapter VII. (pp. 380–418) is devoted to the medulla oblongata and cerebral nerves. The cranial nerves are pretty fully dealt with as befits their importance. Some additional clinical phenomena dependent on lesions of them in disease would have been helpful.

Chapter VIII. deals with the hind brain (pp. 419–485) very fully indeed. This is not to be wondered at, having regard to the important and now classic contributions (1891) which the author himself has made to the physiology of the cerebellum. He does not subscribe to the doctrine of Stefani, that it is an organ for equilibration and orientation of the body in relation to its environment. Much stress is laid on the work of Bolk from a purely morphological point of view, and on that of Van Rynberk from an experimental standpoint. There is no decisive argument for localisation in the cerebellum, though some experiments on monkeys harmonise well with the localisation indicated by Bolk. The mid-brain and thalamencephalon are next discussed (pp. 486–526), and the effects of removal of the cerebral hemispheres in the lower and higher vertebrates. The last chapter (X., pp. 526–633) is consecrated to the fore-brain, its general anatomy, structure of the pallium, history of cerebral localisation, the excitable zones and localisation in dog, monkey, and man, and the physiological analysis of the motor reactions of the cerebral cortex association and other areas, basal ganglia, and speech. As to the histology of the pallium—its myelo-architecture and cyto-architecture—the work of Brodmann is followed rather than that of Campbell.

As to function, Haller (1708–77) regarded the *white* matter—*sensorium commune*—of the brain, not the grey cortex, as the seat of sensation and source of movement. But of all the astounding theories advanced that of the anatomist Sömmering is the most preposterous. In 1796 he localised the seat of the *pneuma psychicon* in the cerebral ventricles. More strange still, he concluded that the *aqua ventriculorum cerebri* is the single medium of nervous activity, the *sensorium commune*, the organ and seat of the soul. He dedicated his treatise to Kant—Kant of Königsberg, of Scottish origin, who in 1781 had published his chief work, "Critique of Pure Reason," and was professor of philosophy in his native town. His lifetime covers the period 1724 to 1804. We seem to be switched back to the middle of the sixteenth century and to Crooke's "Microcosmographia" (1616). In Vicary's "Anatomie of the Bodie of Man," regarding the "Ventricle of Memory," we read: "In the foremost Ventricle are the Five Wits; also the Fancy and the Imagination. In the 2nd or middle Ventricle is Thought. In the 3rd Ventricle is the Memory." Gall and Spurzheim are credited as the founders of the theory of cerebral localisation on the ground that they were the first who brought out the importance of the *grey matter* of the cerebral cortex in general. Gall later lost all critical sense in his eager attempt to solve his phrenological problems.

The alleged "inhibitory" reactions of the fore-brain and organic reactions of cortical origin and epilepsy and the functions of the sensory motor area are next described, analysed, and criticised. The two nuclei of the corpus striatum do not differ in function from those of the sensory motor area of the cortex. The visual area is fully and luminously dealt with. As to the other cortical centres—e.g., auditory—it is more difficult to obtain direct experimental proof. As to the pre-frontal lobes, it appears that their destruction in the dog and ape leaves these animals unaffected in any obvious way in regard to intelligence. "Clinical experience also militates against the theory which ascribes special value in regard to mental functions to the pre-frontal lobes" (p. 621). It is far otherwise with Flechsig's great posterior association areas—parieto-occipital areas. The facts of the morphology, anthropology, experiment, and clinical observations point to the special importance of this region in mental functions and memory itself. The parietal convolutions are extraordinarily well developed in men of high intelligence. Disturbances of speech due to cerebral causes—e.g., aphasia—are carefully analysed in the book, and the conclusion is arrived at that "Marie's cases do not invalidate Broca's theory. If carefully considered, it will be found that they are not irreconcilable with that theory, as shown by Mingazzini" (1908).

We have said enough to show the commanding interest and practical value of modern physiology as set forth in this volume by one of its most masterly exponents. New facts will be added daily, but this full account of the present aspect of physiology itself, as well as of its relation and applications to medicine and surgery, Luciani's "Human Physiology" ranks as a masterly exposition of the present state of a fundamental subject which, besides its importance in relation to medicine, allies itself with the moral sciences. The author recognises that psychical development, even on the ethical side, depends to a large extent upon the somatic substrate. We give a most cordial welcome to this volume, and express the desire and hope that the incubation period of the two volumes yet to appear may be largely diminished, but that will hardly be possible under present conditions. To each chapter is appended a short but useful bibliography. There is a double index—one of subjects and the other of authors. Oddly enough, though Cajal's name occurs in the text, it finds no place in the "Index of Authors."

Materia Medica and Therapeutics.

By J. MITCHELL BRUCE, M.A., LL.D. (Hon.) Aberd., M.D. Lond., F.R.C.P. Lond., and WALTER J. DILLING, M.B., Ch.B. Aberd. Tenth edition. London, New York, Toronto, and Melbourne: Cassell and Company, Limited. 1915. Pp. 645. Price 6*s*. 6*d*. net.

THE authors have taken the opportunity afforded by the new issue of the British Pharmacopœia to make a series of very radical changes in this text-book. The new standard has necessitated numerous omissions and additions, and the whole volume has been largely recast and rewritten. Since the type had to be completely reset, it was possible to alter the arrangement of the material, and the authors have, we think, acted wisely in adopting a pharmacological grouping of the drugs, instead of following the older lines of many former text-books. The new grouping necessarily has some disadvantages, since there are few remedies which do not merit a place in more than one group, and there are some whose claim to the position assigned to them is of the slightest.

An interesting section deals with questions of pharmacy. At the outset the various official preparations are defined and the methods of preparing them are given in useful detail. The directions concerned with practical pharmacy are clearly expressed and, although it is expected that the medical practitioner of the future will not have many opportunities to dispense his own preparations, the information afforded is sufficient to enable him to act on emergency. The few pages devoted to prescription writing are clear and concise.

The section relating to inorganic materia medica maintains the former grouping, based upon chemical composition rather than pharmacological action; thus the alkalies and alkaline earths, the heavy metals and metaloids, the non-metallic elements and acids are treated in separate groups. It is only when we reach the vegetable and animal materia medica and the synthetic preparations that the pharmacological grouping is really adopted; and in this connexion it is interesting to note that the authors retain the term "bitter tonics" to which objection has so frequently been taken by those who wish to restrict the term "tonic" to its purely physiological sense.

So far as the changes necessitated by the British Pharmacopœia are concerned the authors seem to have taken the actual words with a few unimportant omissions. The definitions and the characters are practically identical with those of the British Pharmacopœia. The omissions are mainly concerned with somewhat elaborate tests, which are of importance only to practical pharmacists.

The section devoted to therapeutics has been carefully revised, and many of the dogmatic assertions of former editions have been eliminated in accordance with modern views. A comparison of the information relating to syphilis in this edition with the corresponding paragraph in former editions will sufficiently indicate the care that has been taken to march in step with the times. A few diagrams have been introduced illustrating the action of various remedies on blood pressure, while two diagrams of electro-cardiograms serve to explain this method of investigation. The authors are to be congratulated upon the industry displayed in avoiding deviations from standard authorities.

Defective Children.

By Various Authors. Edited by T. N. KELYNACK, M.D. Vict., M.R.C.P. Lond. London: John Bale, Sons, and Danielsson, Limited. 1915. Pp. 462. Price 7*s.* 6*d.*

The aim of this book is to provide trustworthy and authoritative information with respect to the medical supervision and educational care of the chief classes of defective children of school age, in order that measures may be taken for the rectification, arrest, or amelioration of their disabilities. It is a book which will probably be of great use to school medical officers, but it is addressed also to medical advisers of all institutions concerned with the care of healthy as well as defective children. Most of the chapters are from the pens of recognised authorities, and all of them are valuable contributions to the special subjects with which they deal. There is no attempt made to separate physical from mental defects, probably a wise arrangement, since these two conditions are so closely interdependent. But accordingly chapters on paralytic cripples and tuberculous cripples are wedged in between others on criminal children and defects of vision.

The first chapter is concerned with the correlation of the public health services and administrative questions generally, and is contributed by Dr. E. W. Hope, the medical officer of health for Liverpool. This very important subject scarcely receives its due share of space. Dr. Hope condenses his remarks into ten pages, but some amends for brevity are made in a very excellent bibliography of references at the end of the chapter. This method of supplementing the many curtailments, which are imposed by the limits of the volume, is pursued throughout most of the chapters, and will be highly appreciated by readers requiring fuller information on special points. The chapters on the mentally defective child, idiots and imbeciles, and the epileptic child are respectively supplied by Dr. Hamilton C. Marr, Dr. Douglas William Hunter, and Dr. Andrew Fergus Hewat. The very important chapter on speech defects in childhood and early adolescence is contributed by Dr. L. H. F. Thatcher, and follows in close detail the methods and teaching of Professor J. Wyllie, of Edinburgh. Mr. Hastings Gilford's chapter on defective growth and development gives an interesting account of the rarer forms of abnormal development, including infantilism, ateleiosis, and progeria, but we venture to suggest that a wider view of the general principles concerned in the determination of anomalies of physical development would have been more in line with the general scheme of the work and more serviceable to the majority of readers. Important chapters are those on open-air schools, by Dr. Lewis A. Williams, and on schools for crippled children, by Mr. R. C. Elmslie. The interests of the deaf child are in the safe keeping of Dr. James Kerr Love.

Taking it all round, this is a very valuable addition to the rapidly growing library of the literature of medical school inspection.

Swanzy's Handbook of the Diseases of the Eye and their Treatment.

Edited by LOUIS WERNER, M.B. Dub., F.R.C.S. Irel., Sen. Mod. Univ. Dub. Eleventh edition. London: H. K. Lewis. 1915. Pp. xviii. + 646. Price 12*s.* 6*d.* net.

ANOTHER edition of this well-known text-book has been called for after an interval of three years. Since the last edition was published the original author, Sir Henry Swanzy, has died, and the revision has been carried out by Dr. Louis Werner, who had been associated with the author in preparing several of the previous editions. The present one retains all the characteristic features which have become so familiar.

The restoration of the chapter on the pupil, omitted in the last edition, is an improvement. The trephine operation for glaucoma has been dealt with at greater length, and there has been considerable revision of the sections dealing with vascular diseases of the retina. Other additions and modifications bring the book up to date, and it will doubtless retain its well-earned reputation as a reliable and convenient manual for students. The coloured plates are the same as in the last edition. The use of small print for the rarer conditions is a distinct improvement, but the retention of asterisks to signify subjects of intermediate importance seems unnecessarily elaborate.

MISCELLANEOUS VOLUMES.

Perpetual Peace: A Philosophical Essay. By IMMANUEL KANT, 1795. Translated with Introduction and Notes by M. CAMPBELL SMITH, M.A. With a Preface by Professor LATTA. London: George Allen, and Unwin, Limited. 1915. Pp. 203. Price 2*s.* net.—Although the nations are at war, the reissue of this translation in a cheaper form—it was first published in 1903—is opportune, for, as Kant points out, the mere cessation of hostilities is no guarantee of continued peaceful relations unless a guarantee is given by each individual to his neighbour. With Kant perpetual peace is an ideal to be sought after, and his essay is devoted to the consideration of the best means, founded on mutual interest, of pursuing that ideal. Miss Campbell Smith, who had the help of Mr. David Morrison, M.A., in revising the translation, has accomplished a by no means easy task, and, to quote the closing words of Professor Latta's preface, "Her work will have its fitting reward if it succeeds in familiarising the English-speaking student of politics with a political essay of enduring value, written by one of the master thinkers of modern times."

The motto "Laugh and the World Laughs with You," which is placed on the title-page of *Round the World in Strange Company*, by NICOLAS EVERITT (London: T. Werner Laurie, Limited. Pp. 283. Price 12*s.* 6*d.* net), exactly expresses the spirit in which Mr. Everitt writes about his travels in the United States and British Columbia. His racy descriptions of men and things are amusing, but his contrast of English and American custom-house methods in favour of the American does not ring wholly true. The book is full of humour and makes excellent reading.——Mr. JEFFERY FARNOL is a sound story-teller. In *The Chronicles of the Imp* (London: Sampson Low, Marston, and Co. 1915. Pp. 219. Price 3*s.* 6*d.* net.) we have a love theme, but the main interest of the romance centres round a boy, who sustains in divers times and places the characters of mediæval heroes, legendary personages, and pirates, with all the intensity of conviction characteristic of the imaginative child. Most of the action takes place in the open air, though the Borrovian element which marks some of Mr. Farnol's other books is absent. To those who can enter with sympathy into the romantic mind of childhood the book will prove delightful, but Mr. Farnol has better work to his credit.

An introduction briefly referring to the characteristics of the early herbalists, followed by a number of curious receipts, has been written by FLORENCE HINE, under the title of *A Chaplet of Herbs* (London: George Routledge and Sons. 1915. Pp. 168. Price 2*s.* 6*d.* net), who evidently enjoys browsing among old herbals. A longer introduction would have been an advantage, but it would be ungenerous to complain when such copious extracts that follow on "old-fashioned lore, gathered some of it from manuscripts which seem to have escaped the eyes of the curious, and the rest from books which have long slipped out of the memory of man," are given. There is an excellent bibliography.

In *Brazil, 1913* (Printed by Messrs. Butler and Tanner, Selwood Press, Frome, England. Pp. 604. Price 7*s.* 6*d.* net), Mr. J. C. OAKENFULL, the compiler, gives a very fair picture of Brazil in regard to its political and commercial position, together with information on its anthropology, ethnography, and history, as well as interesting descriptions of its fauna, flora, and geology. Appendices include a gazetteer, information as to cost of living, and a bibliography. The maps, plans, and illustrations greatly add to the value of this guide to a most important area of South America.

Egyptian (Arabic) Self-taught, by Captain C. A. THIMM, fourth edition, revised and enlarged by Major R. A. MARRIOTT, D.S.O. (London: E. Marlborough and Co. 1914. Pp. 80. Price 2*s.* 6*d.*), is a practical little handbook of colloquial Arabic as spoken in Egypt. It contains vocabularies of words in common every-day use and a selection of useful phrases. Professor Flinders Petrie has revised the proofs. The book should be a useful primer for the army and navy, travellers, missionaries, and traders in that country, which will doubtless be yet more opened up after the war.

While no books can replace the official Medical and Dental Registers, the various unofficial directories, by reason of their classification of names with regard to localities, greatly facilitate reference, and the *Dental Directory, 1915* (London: John Bale, Sons, and Danielsson. Pp. 236. Price 3*s.* 6*d.* net), which is now in its seventh year of issue and has been enlarged, is a most useful addition to works of this kind. Besides alphabetical and topographical lists of registered dentists in the United Kingdom, the Channel Islands, the Isle of Man, the colonies and abroad, information with regard to the L.D.S. curriculum is included, as well as much general information concerning universities, colleges, schools, hospitals, dental societies, and so forth.

JOURNALS AND MAGAZINES.

Quarterly Journal of Medicine. Edited by WILLIAM OSLER, J. ROSE BRADFORD, A. E. GARROD, R. HUTCHISON, H. D. ROLLESTON, and W. HALE WHITE. Vol. VIII., No. 31, April, 1915. Oxford: At the Clarendon Press; London, Edinburgh, New York, Toronto, and Melbourne: Humphrey Milford. Subscription price 25*s.* per annum; single numbers 8*s.* 6*d.* net each.—The contents of this number are: 1. Two Cases of Patency of the Ductus Arteriosus, by T. Wardrop Griffith. An interesting account is given of two cases of this developmental defect, in both of which the condition was recognised during life. One of the patients died from infective endocarditis, and the diagnosis was verified post mortem. In the other patient the signs were such as to suggest that there was some further anomaly of the great vessels, and possibly a developmental error giving rise to cyanosis, a symptom which is not usually met with in uncomplicated cases of patent ductus arteriosus. Dr. Wardrop Griffith discusses the causes and effects of this interesting abnormality. 2. Alterations in Arterial Structure and their Relation to Syphilis, by Hubert M. Turnbull. The normal structure of the arteries, the changes which occur during the growth of the individual, and the functions of the coats are considered, and then the abnormalities of structure are classified as follows: hypertrophies, degenerations, amyloid infiltration, inflammations, arteriosclerosis, aneurysm, and direct rupture. Each one of these changes is then discussed, more especially in regard to its causation and the part played by syphilis in this connexion. 3. Mumps: A Critical Review, by Anthony Feiling. An interesting summary is given of our knowledge in regard to this common infectious disease, together with a critical analysis of recent observations upon its pathology, bacteriology, and complications. Dr. Feiling incorporates some personal observations upon the blood in 42 cases of this disease. He shows that there is a slight increase in the total number of leucocytes, together with a lymphocytosis which is both relative and absolute, that this lymphocytosis is present on the first day of the disease, and persists for at least 14 days. He suggests that this blood change is of diagnostic value in differentiating mumps from other inflammatory swellings of the parotid or submaxillary gland. A bibliography extending to 98 references is given.

Cornhill Magazine.—In the June number of *Cornhill* Mr. Anthony Hope Hawkins contributes some observations in defence of the memory of his kinsman Lord Brampton, and, as in the case of Sir Herbert Stephen's vindicatory article in May, Sir Edward Clarke is given an opportunity to make an immediate, or simultaneous, reply. This, it may be observed, is a convenient plan when anything in the nature of a controversy takes place in a magazine published at monthly intervals. Mr. Hawkins argues that Sir Edward Clarke could have raised the question of Sir Henry Hawkins's judicial conduct in Parliament, and incidentally describes his uncle as a "conscientious, wise and a compassionate judge." We can leave Sir Edward Clarke to assert the difficulty of securing the removal of a judge from the bench for the kind of conduct of which he alleges Sir Henry Hawkins to have been guilty, but with regard to the passage cited it may be suggested that probably the quality of compassion, which the late judge no doubt possessed, overrode those implied by the other two epithets, with the result that he "got a verdict" which was not supported by the evidence. Sir Henry Hawkins was not a man to risk being publicly proved wrong if he could help it, but in the particular instance selected by Sir Edward Clarke he, no doubt, was led by sympathy with the victim to underestimate the weight of the medical evidence called for the defence and of the medical opinion behind it.

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE SOCIETY.—A meeting of the executive committee took place at the society's offices on May 21st, Dr. F. J. Allan being in the chair. During the first few months of the year the sickness claims were heavy owing to the influenza epidemic, but claims have since fallen to normal. It was reported that since the outbreak of war the society had paid the sum of £250 in claims arising from injuries received by members on active service. The number of the society's members serving in the Royal Army Medical Corps steadily increases, and much satisfaction has been expressed at the treatment accorded them by the society in respect of their sickness and accident benefits. In spite of the adverse conditions experienced among all insurance companies, the society is maintaining its new business. Prospectus and all information will be supplied by the secretary (300, High Holborn, W.C.).

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

TUESDAY, JUNE 1ST.

THE General Council of Medical Education and Registration began its summer session to-day at its offices, 299, Oxford-street, W. Sir **DONALD MACALISTER**, the President, was in the chair.

New Members.

Sir **BERTRAM WINDLE**, M.D., took his seat as representative for the National University of Ireland for three years from Dec. 10th, 1914; and Sir **ARTHUR CHANCE**, F.R.C.S.I., took his as representative of the Royal College of Surgeons in Ireland for one year from Feb. 5th, 1915.

An Apology for Absence.

A letter was read from Dr. Hepburn, in which he intimated that he was unable to attend the Council this session owing to his duties as a medical officer of the Western Command at Cardiff.

President's Address.

Sir **DONALD MACALISTER** delivered his presidential address. He said :—

My first duty is an agreeable one. I have in your name to welcome back to the Council two former members whose past services are still fresh in our remembrance. Sir Bertram Windle, from the National University of Ireland, takes the place of our late colleague Sir Christopher Nixon. Sir Arthur Chance, from the Royal College of Surgeons in Ireland, resumes his old seat, vacated in February last by Sir Lambert Ormsby on the completion of his term of office.

The Council will also be glad to see in his accustomed place our Registrar, Major King. After strenuous labours with his regiment at the front, Major King was invalided home some months ago. He has now sufficiently recovered from his disablement to be allowed to give us his services as Registrar during the session, pending the decision of the War Office as to his future sphere of military duty. During Major King's absence Mr. Cockington, as Acting Registrar, and the other members of the staff have carried on the work of the office with praiseworthy zeal and efficiency.

I have to record with regret the death, since we last met, of our former colleague, Mr. Thomas Bryant, who retired in 1904, after 13 years of service as Treasurer of the Council.

The stress of the great war is still urgent upon us all. The country's call for service and sacrifice has been heard and answered in every part of the Empire. The response from members of our own profession has been especially prompt and generous. Many thousands of our brethren have freely given themselves and their sons, postponing every other claim to the demands of national duty. Members of the Council are fully sharing both in the service and in the sacrifice. To those of our colleagues who are to-day mourning, in proud sorrrow, the loss of gallant and promising sons, we offer the tribute of our heart-felt sympathy. And we deepen our resolve to ensure, by every service within our power, that such sacrifices shall not have been made in vain.

The call for qualified physicians and surgeons to take up duty with the Forces has become more and more insistent with the growth of the new armies. Our professional reserves, at no time large, have been drawn upon to the full. Throughout the kingdom organised efforts are in progress for such a readjustment of civil practice as will liberate all who can possibly be spared for the medical service of the Navy and the Army. In these efforts the Scottish Emergency Committee and local committees of the British Medical Association, with the effective coöperation of members of this Council, have taken a leading part. The services of qualified women have been freely offered and accepted for many of the places that are now vacant at home. Senior students, enrolled in the combatant ranks, have been recalled by the War Office, and directed to complete their curriculum with a view to qualification for the Royal Army Medical Corps. Special qualifying examinations have been held by the licensing bodies for candidates whose curriculum was completed. And from overseas have come large numbers of our colonial colleagues, who are possessed of qualifications registrable in this country, and so are eligible for commissions in our army. By the opportune action of the Belgian Government and of the Privy Council the Executive Committee was enabled to give effect to the application of Part II. of the Medical Act (1886) to Belgium, with the result that about 60 Belgian doctors of medicine have become legally qualified to practise in Britain, and to occupy professional positions in public and other institutions.

From all these sources we have obtained timely and valuable help, but they must if possible be supplemented. If we are to make good the losses in the Army Medical Service we must accumulate larger reserves. The casualty lists, and, I am proud to add, the lists also of rewards for conspicuous gallantry, testify to the magnitude of these losses. We must endeavour to fill the vacant places by men whose training and skill can be guaranteed, and whose devotion is not inferior to that of their fallen comrades. We look with confidence to the medical schools and corporations to aid us in our endeavour to maintain, even in the present emergency, the standards of teaching and of testing which we regard as essential to efficiency.

The inquiries, to which I referred in my address last November, regarding the number of students actually in attendance on courses of medical study at the several schools, have shown that at the end of 1914 there were considerably over 1000 fewer than in 1913. The recall of senior students from active service to resume their professional studies has had a favourable effect on the fifth year, now drawing to a close; but we must expect during the next few years a falling off of some 250 per annum in the number who become qualified as medical practitioners.

In the same address I called attention to the fact that, from certain of the provinces of Canada, able and efficient surgeons were desirous of coming to the aid of the Mother Country, but were hindered by difficulties created by their local registration laws. Encouraged by the reception accorded to my remarks here and in Canada, I ventured to communicate with the various medical authorities concerned, and to point out once more the Imperial bearings of the question of reciprocity. The response has exceeded all my expectations. From Ontario, British Columbia, Saskatchewan, Manitoba, and Alberta have come messages, often by cable, stating that legislation has already been initiated for the removal of existing provincial restrictions; and that the provinces desire that reciprocity with this country may be established at the earliest possible date. When the necessary steps are completed, and I have reason to think that no obstacles need be apprehended on this side of the Atlantic, all the provinces of Canada will have severally entered into reciprocal relations with the United Kingdom. The way will then be open for the application of the Medical Act (1886) to the Dominion as a whole, as it is now open to the Commonwealth of Australia. Thus, by the concurrent action of the separate provinces, the Dominion Medical Act, whose operation has hitherto been restricted so far as Imperial relations are concerned, will assume a more comprehensive character, and the medical federation of the Empire will be at length accomplished. Canada possesses schools of medicine of the highest repute; and we may confidently count on receiving from them a further supply of graduates qualified in all respects for the medical service of the State, and legally entitled to practise in any part of His Majesty's Dominions.

The British Pharmacopœia, 1914, was duly published in accordance with your instructions on Dec. 31st. The first issue of 20,000 copies is nearly exhausted. Steps have been taken for the preparation of a second issue, in which a few typographical faults, noted in the first issue, have been corrected. As you are aware, the Pharmacopœia Committee endeavoured to adapt the work to the general requirements of the British Empire, and at the same time to harmonise its directions with those of the States which were parties to the international agreement of 1906. The reception accorded to the new Pharmacopœia, both in the British Dominions and in foreign countries, encourages us to hope that our efforts have in a large measure been successful. The Government of India has intimated that a special edition, such as was prepared in 1900 for Indian use, will no longer be necessary in that country. The Belgian

Government, notwithstanding its present difficulties, has courteously undertaken the duty of intimating to the signatory powers the publication of the British Pharmacopœia, and the manner in which effect has been given therein to the recommendations of the international agreement.

In India legislation for the better regulation of medical practice, already accomplished as regards certain of the Presidencies, is in course of extension. We have received official intimation of a proposed medical ordinance for the United Provinces; and of new regulations, by the Government of India, under which the educational and professional standards for the subordinate medical department will be considerably improved. This will probably form the subject of a report to the Council from the Examination Committee.

From the English Board of Education a communication has been received, from which it appears that there is now some prospect of the establishment in England of a central authority, charged with the coördination and supervision of secondary school examinations and the inception of a system of leaving certificates. Such a system has long existed in Scotland, to the manifest advantage of secondary education in that country. The Council in 1904 resolved: "That any well-considered plan which would tend to a diminution in the number of examinations in preliminary subjects of education, and to a unification of standard of those which remain, would meet with the hearty approval of the Council." The subsequent experience of the Education Committee and of the Council with reference to the recognition and supervision of preliminary examinations, has not been such as to suggest that a "well-considered plan" of the kind would be other than welcome now. I have referred the Board of Education's circular to the Education Committee in order that you may have its report on the proposals at the present session.

At the instance of the Dental Education and Examination Committee inquiries have been addressed to the dental licensing authorities and dental schools as to the suggested deficiency of registered dentists. The replies received indicate the prevalence of an opinion that the unsatisfactory state of the law concerning unqualified practice has a deterrent effect on candidates, and that the duration and stringency of the present curriculum do not constitute a serious obstacle. The committee will present to you a synopsis of the views expressed by the various authorities, and will report on the questions raised by Dr. Newsholme's motion of Nov. 26th, 1914.

Under the powers conferred by you on the Executive and Office Site Committees, these bodies have made satisfactory progress in the task of providing new and better accommodation for the medical and dental work of the General Council and the English Branch Council. The present site and buildings facing Oxford-street have been sold to advantage. A new site in Hallam-street, near Portland-place and New Cavendish-street, has been secured. Mr. Eustace Frere, A.R.I.B.A., has prepared a design for handsome and commodious buildings, which has met with your approval, and has been accepted for exhibition at the Royal Academy. A contract for the erection of the buildings has been made with Messrs. Chinchen and Co., who have undertaken to complete the work by Nov. 1st. The structure has already reached the first floor, and there is a good prospect that the Council may be able to enter into occupation of it by the end of the year. Much pains have been taken by your committee to ensure that the arrangements made for the disposal of the old building, which we have outgrown, and for the new premises, in which we count on carrying forward our work with greater efficiency and convenience, shall be profitable to the Council and adequate to its needs.

Certain financial adjustments, as between the General Council, the Branch Councils, and the Dental Fund, have been under the consideration of the treasurers and the legal advisers of the Council. You will probably think this a suitable opportunity to define more clearly than heretofore the relations of their accounts in respect of capital and current expenditure. Fortunately the financial position for the last year is a favourable one; for although the expenses of the General Council have been unavoidably increased by certain temporary causes, the income of the four Councils in the aggregate exceeds their total expenses by some £2300. The prospect of a greatly diminished income due to the falling off in registrations during the next four or five years, which we must face as an incident of the war, will make it wise to persevere in effecting economies wherever these are practicable.

I am happy to say that our judicial work at this session promises to be less exacting than usual, and that our sittings need not be prolonged beyond this week. In connexion with the enforcement of the penal provisions of the Medical Acts, our thanks are specially due to the Royal College of Physicians of Edinburgh for its public-spirited action in prosecuting two firms of unqualified persons, who conducted so-called practices in that city to the scandal of the civic authorities and of the profession. The penalties recovered have, by order of the Executive Committee, been remitted to the Royal College as a contribution towards the expenses it has incurred. The College, by undertaking this important service, has demonstrated anew its corporate interest in the safeguarding of the public health.

Appointment of Committees.

The following committees were appointed:—

Executive Committee.—The President, Dr. Norman Moore, Sir Henry Morris, Mr. Tomes, Dr. Langley Browne, Mr. Hodsdon, Dr. Norman Walker, Sir John Moore, and Sir Charles Ball.

Penal Cases Committee.—The President, Dr. Saundby, Mr. Tomes, Dr. Norman Walker, and Dr. Little.

Business Committee.—Dr. Norman Moore (chairman), the President, Dr. Norman Walker, Sir Henry Morris, and Dr. Little.

Pharmacopœia Committee.—The President (chairman), Dr. Norman Moore, Sir Thomas Fraser, Sir George Philipson, Dr. Cash, Dr. Caton, Sir John Moore, Dr. Barrs, and Sir William Whitla.

Finance Committee.—Mr. Tomes (chairman), the President, Mr. Hodsdon, Sir Henry Morris, and Dr. Little.

Dental Committee.—The President (chairman), Sir Henry Morris, Mr. Hodsdon, Mr. Tomes, and Sir Charles Ball.

Dental Education and Examination Committee.—Mr. Tomes (chairman), the President, Dr. Knox, Sir Henry Morris, Sir Arthur Chance, Mr. Hodson, and Sir William Whitla.

Students' Registration Committee.—Dr. Norman Moore (chairman), the President, Dr. Mackay, Dr. Langley Browne, Dr. Norman Walker, Sir William Whitla, and Sir Bertram Windle.

The Finance Committee's Report.

Mr. TOMES submitted the report of the Finance Committee. That report stated that the income of the General and Branch Councils for the year ending Dec. 31st, 1914, was £9850 14*s.* 6*d.* The expenditure was £7550 16*s.* 2*d.* Consequently there was a surplus of £2299 18*s.* 4*d.* The report went on to state that the income of the General Council showed an increase of £67 11*s.* 11*d.* An increased sum of £80 was received for colonial and foreign registration fees, but the interest on deposits at the bank was less. All the branches had increased receipts from registration fees; the English branch receiving £783 10*s.*, the Scottish branch £420 9*s.* 6*d.*, and the Irish branch £189 7*s.* 6*d.* more than in 1913, making a total increase of £1518 3*s.* 2*d.* At one time it was feared that during the next year or two the registrations might fall much below the average owing to the number of senior students who had gone to the war in various capacities, their qualification being therefore delayed. The War Office, however, had made efforts to send back to their studies all fourth and fifth year medical students, and it might therefore be hoped that the decrease would be less than was anticipated. The number of students registered was 1600, which was an increase of 120 over 1913, and compared favourably with the average of 1374 for the years 1911–1913. At the present day medical practitioners were in great demand, and were easily able to procure employment; probably this fact was being more fully recognised by the public.

Mr. TOMES, in commenting on the report, said it was satisfactory and it contained no recommendation to the Council. So far the diminution of income had not been felt. Some extra expenditure had been incurred owing to the meetings of the Executive Committee regarding the steps to be taken in connexion with the recognition of Belgian medical qualifications.

The report was adopted without discussion.

The Recognition of Belgian Qualifications.

The PRESIDENT submitted reports from the Executive Committee in regard to the admission of Belgian medical and dental practitioners to British registration. The report in regard to the medical practitioners stated that: "Part II. of the Medical Act (1886) having been extended by an Order in Council to the kingdom of Belgium during the continuance of the present war, the committee has considered the conditions under which medical qualifications granted in the kingdom shall be recognised for registration in the Foreign List of the Medical Register of the United Kingdom, and has adopted the following resolution: That so long as the Order in Council of Jan. 7th, 1915, remains in force, any person who produces evidence satisfactory to the Registrar that he has obtained the degree of Doctor of Medicine in the Belgian Universities of Brussels, Ghent, Liége, and Louvain, and is legally authorised to practise medicine, surgery, and midwifery in Belgium; and who satisfies the Registrar as to the other particulars specified in Section 12 of Part II. of the Medical Act, 1886, shall be entitled to be registered in the Foreign List of the Medical Register."

The PRESIDENT said that, as he had already mentioned in his address, between 50 and 60 Belgian medical men had taken advantage of this opportunity to register, and others were coming forward.

The report was formally received.

With regard to Belgian dental practitioners a separate report was submitted. It was in the following terms: "The Executive Committee at its meetings on Jan. 22nd, 1915, and Feb. 22nd, 1915, as a matter of urgency arising out of circumstances connected with the war, instead of remitting the question to the Dental Education and Examination Committee for consideration and report to the General Council in the usual way, considered the question of the recognition of Belgian diplomas in dentistry and dental surgery. The committee at the latter late had before it official information in regard to the course of dental professional study and examination which had been furnished by the Belgian Minister of the Interior, and adopted the following resolution:—

(*a*) That a person who has attained the grade of Candidate in Medicine at one of the four Belgian Universities of Brussels, Ghent, Liége, and Louvain, and has, after pursuing the further course of study prescribed for dental practitioners, passed the Diploma examination held by a Belgian Provincial Medical Commission, shall be entitled to be registered in the Foreign List of the Dentists Register, provided he produces to the General Registrar satisfactory evidence in regard to the particulars set forth in Sections 9 and 10 of the Dentists Act, 1878.

(*b*) That, in view of the urgency of the matter, this resolution (*a*), adopted by the committee on behalf of the Council, become at once operative as an instruction to the Acting Registrar; and that the resolution be reported to the General Council for confirmation at the June session."

The PRESIDENT remarked that the information which the Executive Committee now had was that persons who since 1899 had passed the examination which was now prescribed for dentists, were eminently worthy of recognition.

The report was received and the resolution of the Executive Committee was confirmed.

Dental Cases.

The Council considered the reports of the Dental Committee in regard to certain dental practitioners.

The first case was that of Valleck Cartwright Mallan, who was registered in the Dentists Register on Dec. 6th, 1878, as "in practice on July 22nd, 1878." A previous report of the Dental Committee dealt with the manner in which his practice at 106, Edgware-road, had been conducted.

In their present report to the Council the committee found that the following facts were established by the evidence:—"Since the last hearing the said Valleck Cartwright Mallan has removed the tickets, newspapers, advertising letters from patients, and photographs from the doorway and window of the premises, and he put in a photograph of the premises as they now are. He stated that he has also entirely discontinued advertising his practice by means of circulars, pamphlets, or newspapers, by hand or through the post. The complainants offered no evidence that the said Valleck Cartwright Mallan had not fulfilled the undertaking which he had given to the Council."

The complainants, the British Dental Association, were represented by Mr. R. W. Turner, counsel.

Mr. Mallan attended.

After deliberation the Council decided not to erase Mr. Mallan's name.

The next case was that of George William Hammond.

The Dental Committee reported that: "The said George William Hammond was registered in the Dentists Register on Dec. 31st, 1878, as 'in practice on July 22nd, 1878,' and his address in the Register for the current year is 56, Kennington Causeway, S.E. Mr. Hammond did not attend. The solicitor proved the posting of the notice of inquiry on May 8th, 1915, by registered post to him at 56, Kennington Causeway and to Dental House, Ripon, his previous registered address. In both cases the notice was returned through the dead letter office. There is, in fact, no such place as Kennington Causeway, and Mr. Hammond no doubt meant Newington Causeway, near Kennington. Inquiry at 56, Newington Causeway (a common lodging house) elicited the information that although Mr. Hammond was well known and had stayed at that address he was not staying there then, but would probably be found at Rowton House, Newington Butts, where the notice of inquiry was forwarded with a covering letter by registered post on May 17th, 1915, and has not been returned. The committee find that the following facts were established by the evidence: That on Oct. 10th, 1912, the said George William Hammond was convicted at Ripon of felony, and that he was fined £1 and 7*s.* 6*d.* costs, or one month's imprisonment with hard labour in default. He was received into prison in respect of this conviction on Nov. 25th, 1914, and it was notified to the Registrar on Nov. 27th, 1914. The evidence before the committee consisted of the certified copy of the said conviction and of the due posting of the notice of inquiry on the dates mentioned."

Mr. Hammond did not attend.

After consideration *in camerâ*, the PRESIDENT said: I have to announce that George William Hammond having been proved to have been guilty of the felony alleged against him in the notice of inquiry, the Registrar has been directed to erase his name from the Dentists Register.

The Council adjourned.

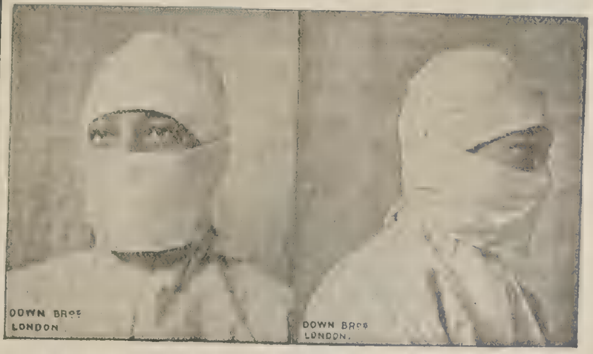
WEDNESDAY, JUNE 2ND.

The Council considered charges against medical practitioners during the whole of the sitting.

New Inventions.

COMBINED OPERATION CAP AND MASK.

THE illustration represents a form of combined cap and mask which will be found exceedingly convenient in practice. It is made in one piece, and is adjusted in the following manner. After putting the cap on the head the long tail-piece is passed across the face and fastened by buttons behind. The advantages are:—(1) More comfortable, no dragging on the ears; (2) it is fastened by buttons and therefore more easily secured; and (3) there is a slit in the cap behind which ensures the cap fitting accurately when the mask is pulled across the face.



The makers are Messrs. Down Bros., Limited, 21 and 23, St. Thomas's-street, London, S.E.

E. J. O'MEARA, F.R.C.S. Eng.,
Major, I.M.S.

Reports and Analytical Records

FROM

THE LANCET LABORATORY.

GLAND PREPARATIONS, VACCINES, AND NUCLEO-PROTEIN TABLETS.

(MESSRS. PARKE, DAVIS, AND CO., BEAK-STREET, REGENT-STREET, LONDON, W.)

CERTAIN of these tablets contain 2½ grains of desiccated anterior lobe of the pituitary body, and others 3 grains of the posterior lobe (infundibular portion). The physiological action of the two lobes being different, it would seem correct to use the tablets independently. The anterior lobe extract has been used in delayed physical and mental development in children of a neurotic tendency, and amongst other maladies, in suppressed menstruation. The posterior lobe extract administered hypodermically or intravenously has been used with most favourable results in uterine inertia and uterine and pulmonary hæmorrhage. Orally its administration has been tried in acromegaly, paralysis agitans, and in certain skin diseases. It is reported that there is no increase in blood pressure when administered by the mouth, though that is the case when it is given hypodermically. The parathyroid tablets contain an equivalent of ⅗ grain of fresh glandular tissue. We have also received specimens respectively of cholera vaccine and a mixed vaccine for coliform infections, both of which are prepared in the vaccine laboratory of St. Mary's Hospital under the direction of Sir Almroth E. Wright. Lastly, we have examined specimens of nucleo-protein compound tablets which present an excellent formula. Each tablet contains 1 grain of calcium glycerophosphate, ½ grain of lecithin, and ¼ grain of nuclein. We had no difficulty in extracting and recognising lecithin. This formula is useful in the treatment of nervous exhaustion and nutritive disorders founded on neuroses.

PROTARGEN.

(MELLIN'S PHARMACY, 48, REGENT-STREET, PICCADILLY CIRCUS, LONDON, W.)

Protargen is an effective substitute for similar silver compounds of foreign origin. It is a light chocolate-coloured powder readily soluble in water. It is a true organic combination of silver in which the silver behaves chemically different from that present in the ordinary metallic salts. It is compatible, for example, with sodium chloride and albumin. It possesses the therapeutic activity of colloid preparations and readily penetrates the mucous membranes. Its use is suggested in gynæcological, ophthalmological, and urological practice.

THE ALLENBURYS CONCENTRATED FOOD PRODUCTS.

(MESSRS. ALLEN AND HANBURYS, LIMITED, 37, LOMBARD STREET, LONDON, E.C.)

Recent additions to the list of concentrated food products now made by this firm are: (1) diet tablets; (2) nutrient lozenges; and (3) meat soup squares. They are all easily portable foods and convenient for the soldier or the sailor or the traveller. The diet tablets are made up of milk solids with wheat and chocolate. They contain, therefore, all classes of food—proteins, fat, and starches. We found that the amount of protein was just 13 per cent. They are obviously useful for tiding over an emergency when substantial diet is not available. The nutrient lozenges consist partly of milk products with wheat to which are added beef extractives. In this case we found that the total proteins amounted to 25·61 per cent. The addition of beef extractives gives them an appetising flavour. These also serve a very useful purpose as an emergency food. The meat soup squares contained 41·63 per cent. of protein. Though not to any large extent soluble, these squares enable a very palatable soup to be made. The presence of meat fibre was confirmed by microscopic examination. These preparations, of course, find a very useful place in times of military campaign.

GRANSALO FOOD.

(MESSRS. S. HENDERSON AND SONS, LIMITED, SLATEFORD-ROAD, EDINBURGH.)

This granular preparation contains all classes of food substance—fat, carbohydrate, nitrogenous materials, and mineral salts. The proteins are derived for the most part from eggs and the carbohydrates from flour. The complete analysis of the preparation gave us the following results: Moisture, 7·80 per cent.; mineral matter, 0·90 per cent.; proteins, 15·43 per cent.; fat, 8·44 per cent.; total sugars, including milk and cane sugar, 34·24 per cent.; and starch, 33·19 per cent. The food in the course of its preparation is cooked, and may be used simply mixed with hot water, milk, or cream without any further treatment. The fat extracted proved to contain lecithin. It is a digestible and nutritious food and attractive in flavour.

UNGUEMOL.

(MESSRS. JOHN BELL, HILLS, AND LUCAS, LIMITED, TOWER BRIDGE-ROAD, LONDON, S.E.)

According to our examination this is a combination of substances which are antagonistic to the activities of vermin. It is free from any harmful ingredient or irritant, while it contains no corrosive or other agent which would spoil clothing. It is a fine light yellow powder and is contained in a canister with perforated top, a lever lid preventing loss of material when the tin is not in use. It contains, amongst other things, a bland oil, sulphur and naphthaline in a fine silica basis. It is intended especially for the eradication of lice on the persons of soldiers in the field.

TUBES OF TURTLE CUP.

(TURTLE CUP, LIMITED, 27, ADDINGTON-SQUARE, CAMBERWELL, LONDON, S.E.)

The idea of packing "turtle cup" in collapsible tubes is an excellent one. The tubes are very convenient in practice, and supply a portable, nourishing, and sustaining soup. The turtle gives the "cup" an attractive flavour, and an appetising soup may easily be prepared in this way. A spoonful or so placed in hot water yields all that is required. Turtle cup has been much appreciated by invalid soldiers and by patients who have little or no appetite for ordinary food. It contains something more than mere stimulating principles; it is a rapid and cheering nutrient.

DONATIONS AND BEQUESTS.—By the will of the late Mr. Thomas Groom Barker, of Eccles and Manchester, the testator left £600 to the Manchester Infirmary; £400 each to the St. Mary's Hospital, Manchester, and the Victoria University; £150 to the Royal School for the Deaf and Dumb, Old Trafford; and £150 to the Cheetham Hospital.—King Edward Hospital, Cardiff, has received a gift of 2000 guineas from Alderman J. H. Mathias, of Porth, Rhondda, for the purpose of endowing two memorial beds.

THE LANCET.

LONDON: SATURDAY, JUNE 5, 1915.

The War and the Supply of Medical Officers.

THE forty-first instalment of the *Times* History of the War, which appeared on Tuesday last, deals with British medical service in the war and takes an all-round look at the medical work which has been done in the field and at home. It does not pretend to be more than a very limited survey, but under the different activities and institutions selected for notice reference is made to most of those subdivisions of an enormous subject which are of essential importance. The position of the Army Medical Service at the time of the outbreak of the war is fairly stated. There is no doubt that we went into the war with a medical service good in personnel, but lacking many things in respect of which urgent demands were soon forthcoming. The moment it was clear that we were to take part as a nation in a vast European land war every member of the medical profession with the slightest experience foresaw that around the Army Medical and Army Medical Territorial Services there would have to be grouped much voluntary assistance. From the beginning of the war that assistance came in freely, and no doubt would have been offered more generally if exact knowledge had been provided as to the needs of the War Office. In the absence of this knowledge it seemed to many civilian medical men that their services were not required, an impression that was confirmed in some places by the rejection of offers of adherence. At first the transformation of various and numerous civilian buildings into war hospitals, some of which are mentioned in the *Times* History of the War, and many of which have been described in our columns, seemed unnecessary, particularly to those who were unable to imagine the developments in store. Everywhere we heard of schools being transformed into hospitals, of buildings being modified for Red Cross or St. John purposes, of country houses being handed over as hospitals and sanatoriums; and while the extent of the land war had not developed only a few people were able to read the signs of the times and to realise that the preparations which had been made would quite soon require to be strongly supplemented. But the various stages of the struggle during the past ten months have enabled us to envisage the situation, and we know that in the grim contest ahead, where all our national agencies and energies must be used with the utmost freedom, the medical profession will be further and further called upon.

Our military authorities think that it is absolutely necessary that we should have in training further large numbers of soldiers to take the place of the heavy depletions which are expected in the future, and of which the casualty lists have given us most dismal proofs in the recent past. More men mean more supplies, more camps, more barracks, more sanitation, and, implicitly, more medical officers, and already these officers have experienced considerable losses. At the summer session of the General Medical Council, which was opened on Tuesday last, the President, Sir DONALD MACALISTER, in a presidential address which we publish elsewhere in full, stated that the call for qualified physicians and surgeons to take up duty with the forces had become more and more insistent with the growth of the new armies, and added that our professional reserves, at no time large, had been drawn upon to the full—unless, we presume, some practical methods of readjustment can be devised. We know that the number of medical men already with the colours is very large, but even if the number remaining behind is in some directions barely adequate to our civil needs the further demands must be met. We are a nation at war. The needs of the army and navy are absolutely paramount. The places of those removed from their civilian work must be supplied by falling back upon every medical man who is unemployed; and those who feel that they are to some extent superfluous in their existing positions, and that they would be able to do more in other directions, must be brought in to civilian work if unable to serve with the forces for any reason. By arrangement of our scientific and administrative labour so that all suspicion of overlapping is done away with, there should be some gain of service; and, in the last event, the dropping of certain developments of public medicine, which though most valuable for the well-being of the country at peace, can for the time being be considered as accessories to the social scheme in time of war, and not as vital necessities, can be effected. No doubt in this way, by a rigid economy of the medical personnel of the country, coupled with some sorting up of that personnel, further civilian medical men can be found for the navy and army; and simultaneously it may be expected that the War Office will turn attention to the work that is being done by those who have already accepted commissions or who are doing part-time service with the forces, and will make sure that no waste is taking place there. If among these officers there is any systematic extravagance in numbers, if many are available for long periods where only few are wanted, this should be rectified at once. If many are doing clerical work whose places could be taken under proper supervision by civilians having no other than a business equipment, we feel that substitutes could be found among laymen who should be as unfitted by various disabilities for actual fighting as they are by lack of qualifications for giving medical help. It is possible that the supply of medical men already with the colours could be made to go further. The matter is one that has throughout engaged the attention of the War Office, and, of course, the members of a service can be manipulated to numerical advantage in a way that a heterogeneous mass of civilians, having nothing but their professional rank in common, cannot be.

We are foreshadowing what would come very near to mobilisation of the whole of the medical profession, and it may be that both individual justice to the medical officer and great advantage to our army and navy would follow if some such course were taken quickly. But it is unfortunate that this unprecedented demand upon our profession should find us with our ranks abnormally thin. At the end of 1914 there were over 1000 fewer medical students actually attendant on courses of study than in 1913. The recall to the schools of senior students who had volunteered for active service will arrest wastage of our numbers caused by the outbreak of war, and will enable the students in their fifth year of study to qualify in due time. But Sir Donald MacAlister has warned the General Medical Council that for several years to come a falling off in the number of qualified men must be expected. On the other hand, the possibility of complete medical reciprocity with Canada is at hand, and when the Medical Act of 1886 applies to the Dominion of Canada as it does already to the Commonwealth of Australia the evils of shortage will be counteracted. The British Medical Association, through a war emergency committee, which has recently been formed, is proposing to obtain a census of doctors as a first step towards judging what further help the medical profession can give, and has issued a form inviting medical men in the metropolitan district to state if they are willing to go on active service, or if they will undertake whole-time service at home or part-time service at home. We need hardly say that such voluntary registration, if it could be made effective, would be preferable in many ways to what is usually understood by mobilisation, for this in the case of a profession like ours presents an enormous amount of difficulty and would inevitably lead to many hardships. But in making a voluntary register this fact remains—the responsibility is placed upon each individual to make up his mind as to the seriousness of the situation, and the different conceptions on this point lead to unfair results.

Sanitary Scavenging.

The Public Health Department of the Local Government Board have most opportunely published a Return as to scavenging in urban districts in England and Wales which has been compiled from the schedules furnished by the authorities of those districts at the beginning of 1914. Ostensibly the inquiry was undertaken with the view of precaution before the onset of hot weather and had no reference to the war, but the heavy imposition placed upon the efficiency of our sanitary system by refugees and by the great number of troops in every town and village in the country has added a special value and importance to the findings. For, as is pointed out in a circular addressed to medical officers and the administrative bodies concerned, it is especially desirable at the present time, considering this congested state of affairs, and also when there are peculiar dangers arising from the spread of infectious diseases, that our sanitary authorities should do all in their power to prevent the retention of accumulations of refuse in the neighbourhood of dwellings and generally to maintain an efficient service for dealing with house refuse.

The Return should materially help domestic sanitation, for the information and advisory measures which it contains will be valuable in many directions, while in an appendix are given the arrangements at present in force for the storage, collection, and disposal of refuse in each urban district. In a preliminary memorandum the directions in which defective arrangements may prejudice public health are indicated, and how these arrangements may be improved is a further subject of consideration. The Board invite health authorities to deliberate whether in regard to their district certain elementary, though effective, principles are followed. The use of the sanitary bin in connexion with all new houses and buildings is enjoined, and especially the covered model, and it is suggested that in the populated parts of a district the scavenging should be undertaken by the authorities' own staff, who should remove all refuse in properly covered carts at least once a week, especially during hot weather. In places where no destructor is available the removal of refuse should be carried out with every precaution to prevent its causing nuisance and danger to health, and if tips are used these should be as remote as possible from dwellings and the material covered with earth and the tip fenced in. All these are quite simple suggestions, and they should be carefully followed throughout the land. Their application will go a long way towards preserving a clean bill of health during a period in which the beginning and continuation of infectious disease are alike favoured by summer conditions.

It will be readily recognised that as the efficiency of scavenging is increased so will danger from flies diminish, since it is well established that ashpits and refuse depositories are their favourite breeding places. From an ideal point of view house refuse should not be allowed to accumulate at all, and as the art of domestic architecture develops we can imagine that for every household there will be its own destructor. This is not yet practicable, although to some extent such a position is realised when as much as possible of the refuse is destroyed in the kitchen fire. With, however, the increasing use of gas and electricity for cooking purposes the domestic facilities for burning refuse will get smaller and smaller. On grounds of public health fire is the best scavenger of all, but except in large towns the destructor is generally too expensive a proposition. We still await a destructor which by automatically effecting economies can be brought into service in every community, whether large or small. At present it is only the luxury of large and rich districts, and often then it is a source of nuisance.

Annotations.

"Ne quid nimis."

INDUSTRIAL ACCIDENTS IN AMERICA.

IN the United States of America human life is cheap and industrial accidents frequent. An estimate by Mr. T. J. Riley in the Bulletin of the Department of Health, City of New York, places the number of deaths by such accidents at nearly 35,000 per annum. It is calculated that the total number of both fatal and non-fatal industrial accidents must be about 700,000 a year. On the average, 9 railway employees are killed by accident every day in the United States, and 1 is injured every 11 minutes. Out of every 200 coal-mine employees, 1 is killed by accident yearly. These figures refer to occupied males above 15 years of age, and do not include the women workers; it must be noted that four-fifths of the men thus injured are 40 years of age or under, so that the economic waste due to these accidents is extremely large, the victims being struck down in the prime of life. Among the transport workers, it is said, fatal accidents are about three and a half times as common in the United States as they are in Great Britain. More than half the fatal and non-fatal accidents are due to unguarded or inadequately guarded machinery in motion; the remainder are caused by falling bodies, collapsing buildings, explosives, hot liquids, acids, and steam. These facts indicate the nature of the precautions that should be taken to reduce the excessive number of accidents. Moving machinery must be guarded, lifts must be made fool-proof, automatic mechanisms must take the place of human beings or human interference, and the inspection of scaffoldings, buildings in course of erection, lifts, and the like, must be made effective. In America, it seems, it still costs less to kill a man by accident than to protect him against injury. Mr. Riley advocates the wider recognition of the principle expressed in the terms "employers' liability" or "compensation"; at the present time charitable help still plays an unduly large part in making good the social and economic losses caused by industrial accidents. He points out that there is much room for the improvement of hygiene in the pit, shop, or factory; improved hygiene means lessened incidence of disease, particularly occupational disease. Fatigue, again, whether mental or physical, predisposes to the occurrence of accidents, so that unduly long hours of labour should not be allowed. The worker is to be insured for his own benefit against both accident and disease. Who is to pay for the insurance? In the case of accident, Mr. Riley believes, the industry should bear the whole cost. In the case of illness the conditions are not the same; the work and the conditions of the work are responsible only in part for the sickness, and so the cost of insurance against occupational disease should be borne in part by the industry, in part by the worker. Charitable help for these victims of accident or disease is still requisite, and should be given in adequate amount and intelligently. But first and foremost steps should be taken to bring down the number of accidents and to lessen the incidence of occupational disease; both are altogether too high in America.

THE MEMORIAL TO MADAME DEPAGE.

THE following subscriptions have been received towards a memorial to Madame Depage, the wife of Professor Depage, who was drowned in the wreck of the *Lusitania*, when returning from the United States, where she had gone to collect funds for the Depage hospital at La Panne:—

	£	s.	d.
Sir T. Lauder Brunton, Bart., F.R.S.	10	10	0
Mr. D'Arcy Power	5	5	0
Capt. W. J. Greer, R.A.M.C. (T.)	3	3	0
Professor Sinclair White	2	2	0
Mr. Robert Jones...	2	2	0
Lieut.-Col. A. W. Sheen, R.A.M.C.(T.)	1	1	0
Mrs. D'Arcy Power	1	1	0
Mr. W. D. Spanton	0	10	6

All who wish to contribute are requested to send their subscriptions to Mr. D'Arcy Power, 10A, Chandos-street, Cavendish-square, W.

MUMPS.

IN a critical review of this common infectious disease in the *Quarterly Journal of Medicine* (1915, vol. viii., p. 255) Dr. Anthony Feiling brings forward certain observations not very generally known. As regards its causation some valuable and suggestive experiments have been made by Nicolle and Conseille. They were quite unable to find any micro-organisms in the fluid obtained by aspiration of the parotid glands of patients with mumps. But with the fluid so obtained they injected the parotid glands of three monkeys. All three developed, after an incubation period varying from 16 to 26 days, a febrile illness lasting two to seven days, and one suffered from a definite swelling of the left parotid gland. The blood in one animal was noted to show a mononuclear leucocytosis. The same monkey which developed this attack of apparent mumps was subsequently reinoculated, but failed to develop any illness, suggesting that immunity had been conferred by the first inoculation. Dr. M. H. Gordon induced in monkeys, in four out of the ten used, symptoms of severe meningeal irritation and death, following inoculation in sterile saline of a filtrate of saliva from patients suffering from mumps. These experiments suggest that mumps is due to a filterable virus comparable to that of poliomyelitis, small-pox, and typhus fever.[1] The blood changes in mumps are important; there is a relative and absolute increase of the lymphocytes; this is present on the first day of the disease, and persists for 14 days. This is of value for diagnosis. Besides the complication of orchitis, present in 20 to 30 per cent. of cases and coming on during the height of the disease, pancreatitis may occur. Nervous complications also are fairly frequent. Mumps, then, whilst usually not serious, the mortality being only 3 per 1,000,000, may present startling clinical symptoms in some cases, and these offer confirmatory evidence of the generalised infection suggested by the animal experiments.

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[1] On a Fatal Illness in Children associated with Acute Interstitial Parotitis, M. H. Gordon, THE LANCET, August 2nd, 1913, p. 275.

REMOVAL OF A SHELL FRAGMENT FROM THE CAVITY OF THE RIGHT VENTRICLE.

AT a meeting of the Académie de Médecine of Paris on May 4th M. Beaussenat reported a most extraordinary case—the survival of a man with his right ventricle pierced by a fragment of shell which lay free in its cavity, and its successful removal by operation. Wounds of the heart have often been successfully sutured, but removal of a foreign body from one of the cavities does not appear to have been even attempted. A sergeant of the 91st Infantry Regiment was wounded at Saint-Hubert, in Argonne, on Oct. 1st, 1914, by a hand grenade which exploded at his feet. He was hit by three projectiles—in the left deltoid region, in the front of the right thigh, and in the chest. The last projectile entered at a point a finger-breadth below and to the left of the point of the xiphoid cartilage. Severe præcordial pain and dyspnœa followed. There were hæmoptysis and abundant hæmorrhage from the epigastric wound, which was arrested by applying a dressing. After remaining 24 hours at a dressing station he was removed to hospital. The hæmoptysis was arrested on the fifth day. A radioscopic examination of the chest was made and the report was: "Shrapnel bullet entirely free on the diaphragm." He was never free from painful dyspnœa on effort and præcordial anguish, especially at night. He was taken to Nantes, where, after several radiographic and radioscopic examinations, the diagnosis was: "Fragment of a ball implanted in the pericardium and following all the movements of the heart." Inspector-General Delorme proposed an operation, which the patient declined. He left hospital on Jan. 26th, 1915, on seven days' leave, in the course of which he presented himself for medical examination at Paris. He complained of a persistent sensation of anguish which had much increased since he had left hospital. He was admitted to Auxiliary Hospital 147 on Feb. 4th. The face was pale and a little anxious. The breathing was short and became very rapid when he stood up, walked, or even spoke. He was careful to walk quietly, to speak slowly, and not to make brusque movements. He was more uncomfortable in the horizontal than in the vertical position, and his nights were particularly bad. He had a tendency to hold his hand over his heart, which was simply excitable without any murmur or other sign, except a kind of thrill at the apex. A radioscopic examination was made by Dr. Jaugeas, who found "a small fragment of a projectile with regular movements of little amplitude, synchronous with the heart beats and not influenced by suspension of respiratory movements, manifestly intrapericardiac." On Feb. 17th Dr. Beaussenat made a transverse incision 13 centimetres long over the left fifth rib, which he resected with its cartilage for a distance of 8 centimetres. He pushed back the pleura and exposed and incised the pericardium; it contained liquid, not tinted, but more abundant than normal. Thinking that the projectile might be arrested in the myocardium, he explored the latter systematically. On palpation of the right ventricle he found that it contained a hard movable body. The heart was luxated out of the pericardium and so maintained by two silk loops passed into the wall of the right ventricle. The projectile was brought in contact with the external border of the ventricle near the apex and held there between the left thumb and fingers. While an assistant exercised traction on the silk threads, so as to strain the ventricular wall, M. Beaussenat carefully incised it between them. A gush of dark blood occurred and was instantly arrested by pressure with the index finger, over which during the diastole was passed a forceps and the projectile was seized and removed. It was a metallic splinter of irregular outline 1½ centimetres long and weighing 1½ grammes. The heart wound was sutured with silk and the pericardial and superficial wounds were closed. For three days there was intense dyspnœa and the pulse was feeble and irregular. A marked rhythm "à trois temps" was heard. Recovery, though interrupted by three attacks of pulmonary embolism, was complete on March 17th. Examination in April with the electrocardioscope by Dr. Josué showed only predominance of the left ventricle.

A NEW TEST FOR URINARY SUGAR.

THE difficulties associated with the performance of the ordinary tests for sugar in the urine, of which Fehling's is by far the most commonly employed, are well known, so that the invention of a new diagnostic reagent is a matter of considerable clinical importance. In the *Biochemical Journal* for March Dr. William Cramer describes a method of employing the reduction of a weakly alkaline solution of mercuric oxide to metallic mercury in the presence of suitable sugars, which he considers to have special advantages as a test. The reagent is prepared by dissolving 0·4 gr. of mercuric oxide, red or yellow, with 6 gr. of potassium iodide in 100 c.c. of water, and adjusting the alkalinity of the solution so that 10 c.c. are neutralised to phenol-phthalein by 2·5 c.c. of decinormal acid. The resulting solution is colourless in the cold and turns slightly yellow on boiling. To test for sugar in urine 3 c.c. of the reagent are heated to boiling; then 0·3 c.c. of urine is added and the mixture again boiled. On removing the test-tube from the flame, the mixture darkens if sugar be present, and a deposit of black metallic mercury gradually settles to the bottom. Not only glucose, but lactose, maltose, xylose, and arabinose give the reaction, while cane sugar does not. The sensitiveness of the test fluid can be varied by increasing or diminishing its degree of alkalinity, and the point fixed, as stated above, corresponds to a degree which gives a faint reaction with normal urine, which is known to contain about 0·1 per cent. of sugar. If the reagent is made more alkaline and thus more sensitive, it may give a precipitate with creatinin and other organic substances. Dr. Cramer finds that the "2·5 standard" solution gives a definite reaction with small amounts of sugar in the urine, which only produce doubtful results when tested with Fehling's fluid. He suggests as an indication of the degree of the reaction the possibility of reading print through the solution when boiled in an ordinary test-tube 30 seconds after this is removed from the flame, a few drops of acetic acid being first added to remove any possible turbidity due to phosphates. Small quantities of sugar can thus be recognised and roughly estimated. Ammoniacal urine must not be used for the mercuric test any more than in performing Fehling's reaction. Possibly for ordinary clinical testing the "2·0 standard" solution, which gives no reaction with normal urine, may seem preferable, but Dr. Cramer considers that there is no reason to ignore the minute amount of sugar normally present, when small variations from this percentage can be readily demonstrated.

THE WHITE MAN'S BURDEN IN WEST AFRICA.

THE gravity of the white man's burden in the tropics is now generally recognised. In few places has this burden in the past been greater than in West Africa, and, indeed, it is not so long ago that one of our British colonies in that region was commonly spoken of as "the white man's grave." In recent years continued and strenuous efforts have been made to remedy the conditions which were deleterious to the health of Europeans and natives in West Africa. These efforts have already given encouraging results by reducing both the sickness and the mortality rates, especially among the officials serving in these colonies. In this connexion Dr. A. E. Horn, of the West African Medical Staff, in a paper which he contributed to THE LANCET of May 18th, 1912, drew attention to the improvement which had then taken place and pointed out that credit for the application of the recognised principles of tropical medicine and hygiene was due to the Colonial Office and also to local administrations. These latter, he showed, had consistently authorised and approved of expenditure on sanitary works such as the drainage of marshes, the carrying out of anti-mosquito campaigns, the demolition and reconstruction of native towns and stations, along with the provision and proper control of wholesome water-supplies, and the like, all of which were calculated to improve the conditions of living, not only for Europeans but also for the African natives themselves, and assist, directly or indirectly, in the economic development of the colony. We have received a copy of the report for 1914,[1] just issued, on the vital statistics of non-native officials in the four West African colonies of the Gambia, Sierra Leone, the Gold Coast, and Nigeria, which together employ a white staff of 2641. Owing to the great European war and the resulting military operations in German Togoland and the Cameroons, the burden placed upon the officials of these British colonies was much heavier than usual. Notwithstanding this, the statistics now published present certain satisfactory features. In the year 1905 the death-rate from all causes in the non-native officials was 28·1 per 1000; but in 1913 the rate had declined to 11·8. The year 1914 was exceptional, and it therefore hardly lends itself for comparison with previous years. A large number of officials were released by the colonial Governments for service with the colours at home; others resigned or otherwise determined their appointments for a similar purpose. Moreover, besides the majority of the West African Frontier Force, a great many civil officers were attached to the forces operating in Togoland and the Cameroons, where, apart from the direct casualties in the field, they were naturally exposed in the circumstances to greater risks of disease and other dangers than if they had remained at their posts in their respective colonies. Further, the depletion of the normal staff threw extra work upon those who were left, and also necessitated the retention of many officers in West Africa for periods considerably in excess of the usual length of tour, with the result that the health of some of them suffered and a proportionately higher number of invalidings ensued. Reckoning all the deaths that occurred among the European officials during 1914, the mortality rate was 19·3 per 1000; but if the casualties, 18 in number, in the military operations in Togoland and the Cameroons are deducted, as also 3 other deaths directly due to these operations, the death-rate for 1914 is reduced to 11·6, which is actually just under that of the previous year. The invaliding rate, in spite of the adverse conditions above indicated, was 36·4 per 1000, as compared with 42·6 in 1913. It appears, then, that notwithstanding the exceptional circumstances of 1914, these West African colonies have continued to maintain the progress which had been previously observed. There are, therefore, reasonable ground for believing that the white man's burden in West Africa is being sensibly lightened year by year by the application of the principles of modern science.

VENEREAL DISEASE IN NORWAY.

VENEREAL disease is notifiable in Norway, and during 1914 just over 2000 cases of gonorrhœa and syphilis were notified in its capital, Christiania, which has a population of about a quarter of a million inhabitants.[1] The notification is made by medical practitioners and hospitals, and over 83 per cent. of those notified were males; over a third of all the notifications were made in the month of December, June being the month with the next largest number of notifications. There were 556 cases of syphilis, and it is noted that the infection was extragenital in 20 of these, 6 males and 14 females, the tonsils or lips being the seat of the infection in 11. There were 38 new cases of congenital syphilis, and it is recorded that a special hospital for the treatment of this condition, with 20 beds, was opened in 1914 by the Oddfellows' Lodge at Christiania. It appears that in only 78 cases was the infection acquired in some other town, a low proportion in a harbour visited by so many seamen as Christiania. In 78 instances evidence as to the source of infection was given sufficiently definite to cause special inquiry to be made, and in 60 of these the inquiry gave a successful result. The law allows punishment up to three years of imprisonment to be given to any person who exposes another to venereal infection while knowing or suspecting that he or she has venereal disease himself or herself; 9 men and 18 women were prosecuted under this law, and 2 of the men and 7 of the women were convicted.

MEDICAL DEFENCE.

THE annual meeting of the London and Counties Medical Protection Society was held at 32, Craven-street, Strand, W.C., on May 26th. Dr. G. A. Heron, the president, was in the chair. The report of the council, which was submitted to the meeting and unanimously agreed to, showed a satisfactory record of work for the year. During 1914 the number of applications from members asking for advice and assistance was 621, as compared with 608 during the year 1913 and 575 in 1912. The majority of cases were dealt with successfully without recourse to legal proceedings, and in cases where litigation was necessary the results were also satisfactory. The expenditure on legal action was somewhat heavy, but there was nevertheless a satisfactory increment of the surplus funds of the society at the end of the year. The report showed that 400 new members joined in 1914. Dr. Heron, in his address from the chair, spoke of the need for closer coöperation among medical men in regard to medical defence, and

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West Africa: Vital Statistics of Non-Native Officials, Returns for 914, H.M. Stationery Office, price 1½*d*.

[1] Y. Ustvedt, Tidsskrift for den Norske Laegeforening, Kristiania, 1915.

alluded to a scheme for amalgamation between the London and Counties Medical Protection Society and the Medical Defence Union, which was considered as far back as 1893 without success. He alluded to the support given by THE LANCET then and later to the idea of a fusion between the two societies in terms which suggest the possibility that the idea may revive.

SCIENCE IN CATALONIA.

OVER the greater part of Spain the language spoken is Castilian, nowadays commonly known to us as Spanish. But not less Spanish are two other tongues equally derived from the vulgar Latin once used in Spain—namely, Portuguese-Galician, employed along the western border of the peninsula, and Catalan, spoken by some 3½ million Spaniards living along its eastern border and in the Balearic Islands. As a language Catalan came into existence in the ninth century, when it was brought into Spain from the south of France, Languedoc, by the returning Spaniards, who had been driven northwards out of their country by the Arab invasion in the second decade of the eighth century. Catalan literature, never very extensive in scope or large in quantity, was at its best in the fifteenth century, and after that period fell into decadence from desuetude; Castilian took the place of the Catalan tongue among the educated, and Catalan fell into the position of a *patois*. But about a hundred years ago a revival of the Catalan language and literature was essayed with no little success, and at the present time the effort is well maintained in both poetry and drama. A further example of the new vitality of Catalan takes the form of a "Biological Society" at Barcelona, which published its first year-book in 1914. During the year this society held eight sessions, at which the members read and discussed 30 papers on medical and pathological subjects exclusively, and one on a matter of palæontology. Seven of the papers deal with the electrocardiograph, and are illustrated with numerous electrocardiograms. J. Marimon discusses the question whether both myxœdema and exophthalmic goitre may not be two manifestations of the same disease, hypothyroidism. R. Carrasco details a number of blood-counts in patients with Basedow's disease, showing that in it there is a deviation to the right in Arneth's neutrophil scheme, together with an increase in the nuclear number. Ll. Sayé finds a similar deviation in the leucocytosis produced in both man and rabbits by artificial pneumothorax. He believes that the establishment of such a pneumothorax produces a mild aseptic inflammation in the collapsed lung, and that this accounts for the leucocytosis, which is polymorphonuclear in man, eosinophil in the rabbit. J. Peyrí gives a contribution to the study of McDonagh's leucocytozoon syphilidis, finding himself not in complete accord with some of McDonagh's interpretations of the phenomena observed. Of other papers in the year-book three are written in Spanish, all the rest are in Catalan. The Biological Society of Barcelona is to be congratulated on its scientific activity.

AMONG the new Knights there are two well-known medical men who have earned the honour by scientific and administrative work in medicine. We congratulate Sir James Mackenzie, the distinguished worker in cardiac problems, and Sir Frederick Needham, the well-known expert in lunacy, upon the official recognition of their excellent work.

SIX MONTHS WITH THE BEARER DIVISION OF A FIELD AMBULANCE AT THE FRONT.

BY S. J. A. H. WALSHE, D.S.O., M.B., CH.B.EDIN.,
CAPTAIN, R.A.M.C.

HAVING been during the first six months of the present war in charge of the Bearer Division of a Field Ambulance at the front, I am tempted to record some of my experiences in the hope that they may be at least interesting, if not perhaps useful, to officers who at a later date may have to undertake similar duty.

In this campaign, owing to modern gun fire, it has generally been found quite impossible for the Bearer Division whilst remaining with its Tent Division to go forward, collect the wounded during or after an engagement, and return with the casualties collected to headquarters that night. The Tent Division must of necessity be some miles behind the firing line to be totally outside the zone of fire. To perform its duties properly the Bearer Division cannot possibly remain so far back, owing to the distance and the time which would be lost in coming up. It must almost invariably be in front of our own guns and take up its position from, say, 500 yards to two miles behind the front trenches. Whilst the particular area held by the infantry brigade or units from which wounded are to be collected will be pointed out to one, the selection of the actual site to be occupied by the Bearer Division may be left to the officer in charge, in which place, as a matter of course, an advanced dressing station will be established.

Selection of Site of Advanced Dressing Station.

The selection of this site requires some consideration. One may make it a rule that a battery in action, a bridge over a canal or river, or a chateau (marked as such on the map) are best avoided, as they are most likely to attract the enemy's fire. Neither should the vicinity of a railway station be occupied owing to its gun range being known. Billeting areas of troops are generally observed by hostile aircraft, and for that reason should be avoided.

The most elaborate and possibly the best laid-out advanced dressing station which I have seen was in a railway station. Every available room and all the offices were commandeered for the purpose. No detail appeared to have been overlooked. There was quite a good operating-room fitted up, also a room where patients were to be kept prior to operation, as well as one to which they were to be transferred when operated on. This dressing station might well have been taken as a model, which, indeed, it would have been had it not from its environment been a still better model of a death trap. Unfortunately, it was in a railway station, which in itself is a danger zone, a canal bridge previously shelled by the Germans was not 40 yards away, the adjoining village was entirely occupied by troops, an armoured train came up daily to the station to fire, and as if to complete the picture there were two railway trucks of high explosive shells not 20 yards from the dressing station itself. I have given this instance to demonstrate that the site of a dressing station is of infinitely greater importance than the particular type of house used for the purpose.

When ordered to form an advanced dressing station it is desirable to find some suitable house easily accessible from the road, with good accommodation for patients and the personnel, and near where horses can be stabled, but if possible at least 400 yards away from a battery, or a bridge, or chateau, and as near to the front trenches as the brigade commander thinks desirable. If the sanitary condition of the place and its water-supply are not all that could be desired, one has got to make the best of what one finds.

It is essential that ambulance wagons should be hidden when not in use by covering them with branches of trees, as in the present campaign the Red Cross painted on the wagons has not secured their protection from shell fire. It is unfortunate, but none the less a fact, that ambulance wagons have been shelled by the enemy from a distance at which he could not possibly have mistaken them for any other transport. I have had the position of my dressing station marked by hostile aircraft having detected the ambulance wagons (a large red cross was painted on the top of them) and was severely shelled almost immediately afterwards. It is a wise precaution to have dug-outs or trenches made quite close, which can be utilised when necessary, and it will occur occasionally that a Bearer Division will be compelled to occupy dug-outs entirely.

Collection of Wounded.

When the number of casualties is small the number of wounded are usually collected by the regimental stretcher bearers and carried to the regimental aid posts, from which places it becomes the duty of the Bearer Division to evacuate them to the Tent Division, or possibly to some clearing station. During and after severe engagements the number of casualties is necessarily large, and the work of collecting the wounded becomes too great for the regimental stretcher bearers. Then the Bearer Division must assist them to get the wounded back from the trenches. For this and other reasons it has been found necessary in the present campaign to place the Bearer Division in communication with the headquarters of the infantry brigade, from which it has to evacuate wounded. Such communication is a matter of much importance, and on the way in which it is maintained will, to a large extent, depend the rapidity with which casualties are collected and evacuated. It may be effected in the following ways. 1. By means of a telephone wire laid from headquarters of the brigade to the advanced dressing station. 2. By a cycle orderly. In either of the foregoing methods the entire evacuation is carried out through the medium of the brigade staff, who send direct to the officer in charge of the Bearer Division information as to the number and disposition of casualties and the time when they consider it best to collect and evacuate them. 3. By means of a "liaison" officer. In this method a mounted officer of the Bearer Division with a cycle orderly is told off to remain with and accompany Brigade Headquarters. His duty is "to keep constant touch with the Officer Commanding the Bearer Division by means of his cycle orderly. He must observe where casualties occur or are collected, their numbers, &c. He must note the ground passed over by the brigade, and must lead the Officer Commanding the Bearer Division to the position of the wounded when suitable occasion occurs." In carrying out these orders the liaison officer must be constantly in touch with the regimental medical officers, and so become acquainted if the casualties are too numerous to be collected by the regimental stretcher bearers, and, if so, he reports how many stretcher squads from the Bearer Division each battalion or other unit will require. He also becomes acquainted with the cases which are most seriously wounded (and these require to be evacuated first), how many cases can sit up when pressed for accommodation in wagons, and, further, the most suitable and safest place for a wagon rendezvous.

All these facts communicated at once to the officer in charge of the Bearer Division bring about an extraordinary saving of time in the evacuation of casualties, when time is often of the utmost importance to the lives of the more seriously wounded. This time-saving, to my mind, makes the liaison officer method infinitely the best of any system with which I am acquainted for the collection and evacuation of wounded.

No matter how anxious a brigade staff may be to give information of the type just mentioned, they cannot do so; it is not their work. It is essentially the work of a medical officer, and if left to a layman (in the medical sense of the word) when casualties are numerous unfortunate mistakes are not unlikely to occur.

I, in compliance with instructions, adopted this method during the entire period of the heavy fighting around Ypres in October and November, 1914, when casualties were numerous. I was fortunate in possessing an efficient and capable liaison officer, whose prompt and accurate information enabled me on many occasions to save hours in the collection and evacuation of wounded. The brigade staff readily expressed their approval of the method. It relieved them of all anxiety about the wounded, and thus gave them more time for matters of even still greater import.

The objection most often raised to this method is that it deprives the Bearer Division of the services of one officer. This to a certain extent is the case, but his services are being utilised instead to the best possible advantage where casualties are most likely to occur. I am not at all at one with those who hold that several officers are required with a Bearer Division; indeed, for the greater part of the time around Ypres, during the most severe engagements, the only officer I had to assist me was my liaison officer, and I am quite satisfied that whilst so employed he gave me an amount of assistance which far excelled any work that he could have done for me had he remained at my dressing station. At that time I also had a most reliable non-commissioned officer to assist me.

Transit of Wounded.

At the outbreak of the war the only means of transport for wounded which Field Ambulances possessed were two-horsed ambulance wagons, ten in number. These wagons went to the advanced dressing station with the Bearer Division. However, since last November motor wagons with practically the same holding capacity as the horse wagons have been in use at the front, and their advantages over the latter are obvious.

It is not possible that motor wagons will entirely replace the older horse wagons, and as far as my experience goes there are sound reasons why they should not do so. In the first place, a horse wagon can travel over old, ill-kept roads or over fields which would be quite impossible for a motor wagon to do. Secondly, even good roads in France and Belgium are usually exposed, and when at all near the firing line are not safe for any transport during the day; and at night head-lights may not be used. On this account motors are highly untrustworthy at night near the advanced trenches, and to add to their difficulty the roads would probably have several shell holes. Finally, where a large amount of transport passes to and fro at night the most careful chauffeurs or drivers will occasionally get their vehicles into a ditch, and it is a much easier matter to get a horse wagon out of a ditch than it is to get a motor.

A procedure which was found very useful at Ypres was to send the horse ambulance wagons up as near to the regimental aid posts as the conditions would allow, and bring the patients back—about two miles—to a place where they would be transferred to the motor wagons, which would take them to the appointed Tent Division several miles back.

Recently the Field Ambulances of the Second Division have been supplied with wheeled stretchers (the McCormack-Brook pattern). These have proved to be of the greatest use in saving both time and labour in getting casualties unable to walk from the regimental aid posts to the wagon rendezvous when the distance to be traversed is quite impossible for any ambulance wagon. The opinion about their utility is not unanimous, but the persons who dispute the point have not, one would imagine, ever acted as stretcher-bearer for 1500 to 3000 yards. If they had they would think otherwise.

I previously mentioned that the billeting site of a Bearer Division will, as a matter of course, be utilised as a dressing station. It is not suggested that the cases evacuated from the regimental aid posts should ever be taken in there; they are sent straight to the Tent Division. However, many slightly wounded cases who are able to walk will be directed to the advanced dressing station from the aid posts and trenches, but it will come in still more useful as a place to which the medical officer in charge of the brigade of artillery can send his casualties. And here it might be mentioned that during the first day or two of an engagement this medical officer may be quite at a loss to know where he can send his wounded, not being acquainted with the sites of the dressing stations.

The officer in charge of a Bearer Division would materially assist the brigade medical officer were he to send an orderly to the nearest battery and indicate to them for the information of their medical officer where his dressing station is situated.

Casualties must not be allowed to accumulate at the advanced dressing station owing to the danger of shell fire. It is well for the officer in charge to bear in mind that rapidity of evacuation should be his aim rather than medical or surgical treatment, which can be so much better carried out in the Tent Division or hospital to which cases may be evacuated.

A Point in Treatment.

There is one type of case which perhaps may be made an exception to the rule just mentioned. It is outside the scope of this article to touch on treatment. But when one has had on many occasions cases brought into a dressing station, which have bled profusely from a severe shell wound or are suffering from shock, one ventures to hope that an officer in charge of a Bearer Division will be supplied with the means of giving an intravenous saline injection. The patient's condition is usually such that it is only too obvious that nothing can save him except an injection of normal saline solution. I specially mention the intravenous method because a rectal injection would probably not be retained, or if it were, would not be absorbed sufficiently fast. Delay is also the objection to the subcutaneous or intramuscular method.

I am quite aware that this suggestion will be met with the objections that I am likely to cause an early and profuse reactionary hæmorrhage, which is exactly the condition to be avoided, that I cannot take proper aseptic precautions in the field, and that I may possibly bring on pulmonary œdema. Very well; if I am not prepared to take those risks and work on the principle that being forewarned is to a certain extent being forearmed, I default. I have seen more cases than one in which I had no doubt whatever that an intravenous injection of saline solution would have given more than a probability of saving life, and I am not the only person serving at the front who from experience holds the opinion.

Before closing I wish to make it clear that in this article I do not, under any circumstances, mean to address myself to officers of some years' standing who naturally have their own ideas as to how the Bearer Division of a Field Ambulance should be run, which ideas possibly differ from and are preferable to mine. I have written in the hope rather that my experiences, differing as they do in some respects from one's preconceived ideas, may be of some little use or interest to those officers who, not having of necessity had an extensive military training and not having had any previous experience of actual warfare, may find themselves in the near future coming to the front with the new armies and placed in charge of the Bearer Division of a Field Ambulance.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Early Treatment of Tetanus in Military Hospitals in Time of War.

Dr. Bacri has communicated an interesting paper to the Académie de Médecine, and has insisted on the great importance of early diagnosis of tetanus in wounded patients in the preliminary period of infection, while as yet the patient is not seriously poisoned and while serum injected at this period possesses really curative properties. The following is the method which he has used in his hospital, thanks to which he has had the satisfaction of discovering in time and curing two cases of tetanus which declared themselves in the wards. This method was inspired by the preconceived idea that every wounded patient who enters a military hospital is perhaps infected with tetanus. Every day, morning and evening, the patient should be made to open his mouth, the doctor taking note of the distance between the jaws, and finding out the state of tension which is more or less painful in the angle of the jaw. If in any doubt, he should explore the patellar reflex. The testing of the maxillæ and of the patellar reflex barely occupies a minute. The diagnosis arrived at, inject 40 c.c. of antitetanic serum every day for four consecutive days. In two cases the cure was assured on the fifth day after the first injection. The patellar reflex became normal on the eighth day. The cure was complete on the twentieth day. The systematic examination established that there exists immediately after the period of incubation, at the beginning of the period of invasion of tetanus, a period of treacherous abeyance during which three symptoms, that are easy to discover, point on the surface to the toxic impregnation of the maxillary axis; these are the lessening of the usual width of opening between the jaws; a painful contraction caused by a slight increase in the opening of them; and the very considerable increase of the patellar reflex. At this initial period of infection the antitetanic serum possesses a marvellous efficacy, and its action is by no means inferior as a specific to antidiphtheritic serum.

Preventive Treatment of Typhoidal Peritonitis.

In cases of typhoid fever during the war peritoneal complications are particularly frequent because of the unusually exhausting conditions to which the men are subjected during their evacuation and also because of the defects in their feeding during the same period. As peritonitis in suffering soldiers is almost always fatal, whether operated on or not, M. Courtellement considers it of paramount importance to attempt to prevent its development. In his opinion a suitable treatment, undertaken at an opportune time—that is to say, during the period which he calls pre-peritonitic—offers very excellent chances of success. According to M. Courtellement, three symptoms at this period reveal peritonitic reaction. These are the distension of the abdomen, vomiting, and abdominal pains. As a rule one symptom only, rarely two, indicates the existence of the preperitonitic period. Of the three symptoms the more frequent is the distension of the abdomen. This ought to be taken into account each time that it becomes marked. The vomiting as soon as it is repeated without a plausible cause, in the form of true vomiting or of regurgitations, constitutes a strong indication of peritonitic reaction. As to the pains of the preperitonitic period, they habitually present themselves in the form of intestinal colic; at other times affecting the whole abdomen or of one region, and are spontaneous or at times revealed or exacerbated by the ingestion of liquid. When the peritonitic condition characterised by one of these symptoms has been recognised a special treatment should be commenced without delay; this varies according to whether we are dealing with a slight or a severe case. In slight cases it is sufficient to prescribe immobility on the back. On the abdomen damp tepid compresses may be applied, entirely covering it, squeezed out to get rid of excessive liquid, or else an ice-bag may be used covered with flannel. No milk to be given. In serious cases the treatment requires the same immobility, of course, and prolonged applications of ice on the abdomen. Complete abstention from all drinks, either of the nature of milk or water. The patient is only allowed to suck little fragments of ice if he shows a tendency to vomit, and subcutaneous injections of saline solution, the dose to be one litre per day, 500 c.c. being injected in the morning and 500 c.c. at night. This treatment may be continued on an average three days.

May 31st

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Appreciation of Medical Services in the Persian Gulf.

THE Commander-in-Chief has received the following telegram from the General Officer commanding the force at Basra: "I have received from all quarters glowing accounts of the conduct of medical officers, assistant surgeons, sub-assistant surgeons, and the army bearer personnel of the Shaiba force and of the line of communications. In the action they displayed great bravery, while throughout the strenuous and unremitting labour of the last six days and nights their devotion to duty has evoked universal praise. Including those of the enemy, over 1100 wounded have been attended to and evacuated to the general hospital at the base under conditions of unusual difficulty and strain on the medical personnel, who have nobly done their duty."

Irrigation in the Central Provinces.

The Central Provinces are beginning to benefit from the irrigation works undertaken of late years. As Sir William Meyer said in his speech in introducing the annual financial statement, the Mahanadi Canal has begun to furnish water for irrigation, this being the first canal system constructed in those provinces. Good progress has also been made on the Waiganga canal and the Tendula reservoir. As in 1915-16 18 lakhs are to be spent on the Mahanadi project and nearly 10 lakhs on the other, the rate of construction will be fully maintained. A few years hence the Central Provinces will have quite a large area under irrigation from canals as distinct from that served by tanks, which hitherto have been the only means of conserving water for the land.

Mysore Sub-Assistant Surgeons.

The Mysore Government is contemplating the opening of a new branch for sub-assistant surgeons in its service. It is understood that a number of sub-assistant surgeons are to be specially trained every year in malarial field work and the causation and prevention of malaria.

Deaths from Snakes and Wild Animals in Assam.

The number of persons killed by wild animals and snakes in Assam during the year 1914 is reported to have been 126 and 150 respectively, as compared with 102 and 167 in the preceding year. Tigers were mainly responsible for the increase in the number of persons killed by wild animals, the number of casualties due to these animals being 49, as against 33 in the previous year.

Sanitation in Assam.

A Sanitary Commissioner has now been approved for Assam. The province has hitherto had only a Deputy Sanitary Commissioner.

Military Hospital Nurses.

The Government of India has sanctioned the engagement temporarily of additional fully trained nurses for duty in military hospitals in India. Applications should be addressed to the Director of Medical Services in India, Army Headquarters, Simla.

May 4th.

EUGENICS EDUCATION SOCIETY.—At an afternoon meeting, to be held at the Grafton Galleries, Grafton-street, W., to-day, Friday, June 4th, at 5.15 P.M., Professor Elliot Smith, M.D., F.R.S., will discuss the Influence of Racial Admixture in Egypt. Major Leonard Darwin will preside.

ANNUAL REPORT FOR 1913 OF THE REGISTRAR-GENERAL.

(*Concluded from p. 1149.*)

Analysis of Deaths in Institutions.

AN important addition to the reports of this series will be found in a detailed analysis of the deaths registered in institutions for the sick or infirm. In previous years these deaths had been shown separately from those occurring at home, but the scope of classification has now been considerably extended. Thus, in the present report the *ages at death* are shown in relation to the place of death, whether hospital or workhouse, and in the two preceding reports the *causes of death* are indicated in the same relation. The present tables reveal a great difference in the age distribution of deaths in the several classes of institution—the deaths in hospitals being mainly those of the young and in workhouses mainly those of the aged. A noteworthy feature in these tables is the relatively excessive proportion of institution deaths in the metropolis, amounting to 46·5 per cent. of all males and 40·9 per cent. of all females, as against percentages of 23·5 and 18·8 respectively in the provinces generally. Still more worthy of note are the figures respecting age. At ages up to the sixty-fifth year the male deaths in institutions average half the total deaths in the metropolis at those ages, whilst at age 5–15 such deaths constitute two-thirds of the total. The proportion of male deaths in institutions exceeds that of female deaths at every age group, but at ages between 5 and 45 half the deaths of London females occur in institutions. In early infancy and extreme old age institution deaths are comparatively few, except in London, where they are never less than 30 per cent. of the total.

Causes of Death.—General Diseases.

Dr. Stevenson prefaces his remarks on the causes of mortality by reaffirming the necessity of reference to the "Manual" issued by his department in 1912 for the purpose of explaining the newly adopted scheme of death tabulation, and of facilitating its application to the conditions of English statistics This scheme supersedes the method originally established by Dr. Farr and followed in the central office ever since its inception 70 years ago. Incidentally, the manual supplies information respecting the methods now pursued in the central office in the compilation of mortality returns; this is essential to thorough appreciation of their significance.

From a public health view-point the interest attaching to the statistics of infectious diseases has been greatly increased by the publication of authoritative returns showing the distribution of notifiable diseases throughout England and Wales. In the present report the returns have been arranged to show, for the several classes of area in the four geographical divisions of the country, the "prevalence" of the notified cases of particular diseases in terms of estimated population, and also their "fatality," as expressed by the ratio of deaths to cases notified. This information is, of course, supplementary to the returns of "mortality" as compared with the numbers living, which have appeared in previous years.

Enteric Fever.

In the year under review this disease was responsible for a mortality equal to 41 per 1,000,000 living in England and Wales, as compared with 44 per 1,000,000 in 1912. These are the lowest rates on record; in no year previous to 1907 had the rate been less than twice its present amount. Very unequally distributed is the loss of life from enteric fever. The usual association of excessive mortality with urban conditions was observed throughout the year. Lancashire, Northumberland, and Flintshire were the counties with the highest mortality, and the county boroughs similarly placed were Wigan, Devonport, and Kingston-upon-Hull. Not one of these boroughs had experienced a mortality of less than 110 per million in either of the last three years. Facts such as these indicate that the persistence of excessive enteric fever mortality in England is largely due to the backward sanitary position of a small number of areas. The returns of notified enteric cases in the country generally show that in 1913 both the prevalence and the fatality were lower than in the previous year. In the north, where the attacks in former years had been more numerous than elsewhere, and in Wales there was slightly increased prevalence, with some decline in the midlands and the south. Fatality was highest in the north, the region of greatest prevalence. The position of London was particularly favourable in regard both to prevalence and to fatality. In recent years there has been a marked increase in the hospital treatment of enteric fever, and there is little doubt that by diminishing opportunities for spread of infection hospital isolation has been an important factor in limiting the prevalence of this disease. The figures are not available for the year under notice, but those for previous years show that of the total deaths from enteric fever there occurred in hospitals 50 per cent. in 1911 and 48 per cent. in 1912.

Scarlet Fever.

The mortality from this disease in England and Wales was at the rate of 57 per 1,000,000 living at all ages, and of 171 per 1,000,000 at ages under 15 years. With the exception of the very low rates of the two preceding years these are the lowest on record. The decline of scarlet fever mortality during the last half century is very remarkable. Up to 1906 no year had experienced a mortality less than double that of 1911. The local distribution of mortality varies little from year to year. In the last three years the rate has been twice as high in the great towns as in the rural districts. The north of England has suffered a mortality which is double that of the south, which latter is below that of any other part of the country. The notification returns indicate that the disease was more prevalent in 1913 than in either 1911 or 1912. This increase, however, was accompanied by a decrease in fatality, which was only 16 per 1000 cases, against 18 and 19 in the two preceding years. In the north the fatality was higher than in the midlands or in the south. The extent to which scarlet fever was isolated in hospital cannot be given for 1913, but in the year immediately preceding about 65 per cent. of the deaths occurred in hospital. In London the proportion was as high as 94 per cent., whilst in the rural districts it did not exceed 40 per cent.

Diphtheria and Croup.

Inasmuch as in 1911–13 not less than 97 per cent. of the mortality from this cause occurred at ages under 15 years, the statistics now given relate mainly to that period of life. The distribution of diphtheria mortality throughout the country is given for each of the last three years, from which it appears that apart from a general tendency to increase of mortality with increase of urbanisation, there are no striking differences to record. Although the fatality from diphtheria was higher in the north than in other areas the prevalence of the disease as indicated by notification was at its lowest in that region. From this it does not follow that the disease was either severer or less satisfactorily treated there than elsewhere, for the number of notifications has recently been increased by cases of a milder type, the nature of which can only be established by bacteriological examination. While the practice of making such examinations has been more general in the south than in the north or in Wales, this fact alone may account for the much higher prevalence and lower fatality in the former region. About 80 per cent. of the London deaths from this cause occur in the hospitals of the Metropolitan Asylums Board. It is therefore instructive to learn how low is the fatality of cases now treated there in comparison with that of the years preceding the introduction of antitoxin treatment. Since 1890–93 the case fatality has fallen from 304 per 1000 admissions in that period to 65 per 1000 in 1913. About half the deaths from diphtheria and croup in England and Wales are registered in public institutions.

Tuberculosis.

In the year under notice tuberculous affections in the aggregate accounted for a mortality at the rate of 1340 per million living, which is less than that of any previous year, and is equal to 9·8 per cent. of the mortality from all causes. This satisfactory fall has occurred notwithstanding unfavourable changes in the age constitution of the population. The standardised death-rate of 1913 shows a reduction of 15 per cent. on the average of the quinquennium ended in 1910. The fall was shared equally by both sexes, but the mortality of males exceeded that of females by about one-third. The excess was greater in town than in country; it was 68 per cent. in London and 41 per cent. in the county boroughs, but only 8 per cent. in the rural districts. Urban conditions of life increase the risk of tubercle among males much more than among females, the excess of the London rate over that of the rural districts being 91 per cent. for the former sex but only 33 per cent. for the latter. The adverse effect of town life is especially conspicuous at ages after the fifteenth year, at which age work away from home commonly begins. In childhood this effect is not observed.

Tuberculous phthisis contributed 75 per cent. to the total mortality from tuberculosis in the year under notice, the deaths corresponding to a rate of 1004 per million living at all ages, and to 7·3 per cent. of the total mortality. The local distribution of phthisis is similar to that of tuberculosis generally. There is the same tendency to increase of mortality with urbanisation, which is strongly marked among males and less so among females, so that the excess of male over female mortality increases regularly from the rural districts to the metropolis.

The period of maximum phthisis mortality occurs earlier in life in the rural districts than in the towns, and earlier among females than among males. In the metropolis an excess of mortality is experienced by old men and also by old women. Moreover, the excess of male over female mortality, as well as its increase with urbanisation, is there especially characteristic of old age.

It will be seen by the tables that the excess of male mortality which is so remarkable in England does not exist in Wales, where the rates for both sexes are about equal. In each of the last three years the north of England records a high mortality for both sexes in its great towns, but not elsewhere. The position of the midlands generally is satisfactory for both sexes.

Tuberculous meningitis caused less loss of life in 1913 than in any previous year. Its death-rate has been steadily declining for the last 60 years, and now stands at one-third of its former amount. Such a decline in a period of rapidly increasing urbanisation is the more remarkable because this affection is exceptionally associated with urban conditions of life. That this association holds good for the younger ages only is shown by a table limited to ages under 15 years, within which period 89 per cent. of the total deaths occur. In 1911–13 the mortality in London at ages under 5 was more than double that of the rural districts generally, and at ages 5–10 the excess was almost as great, but at 10–15 the rates for London and the rural districts were practically equal.

Abdominal tuberculosis, including tabes mesenterica, has been decreasing rapidly as a cause of death for the last 30 years, and now accounts for only one-third of the loss of life formerly attributed to it.

Malignant Disease.

Unfortunately no check can as yet be discerned on the increase of cancer or malignant disease which has been experienced in this country for many past years. On the contrary, the loss of life from this cause was greater in 1913 than in any previous year on record. The mortality among males was equal to 947 per million living, and among females to 1155 per million, as compared with rates of 913 and 1117 respectively in the year 1912. The cancer-rates have been standardised for the country as a whole and for the aggregate urban districts as well as for the four geographical divisions dealt with throughout this report. The tables show a constantly increasing mortality in proportion to urbanisation, which is more serious in the case of males than of females. In Dr. Stevenson's judgment "it is quite conceivable that differences of the dimensions shown may be due to the better facilities for diagnosis in the urban areas, where a much larger proportion of the deaths occur in institutions in which post-mortem examination is the rule, than, as in private practice, the exception." The considerable increase of mortality now recorded is very uniform, being common to both sexes in every class of area. It is also widely spread over the different age periods, the chief exceptions being in the case of women at very advanced ages. The excess of female mortality over that of males is concentrated mainly on the ages 25–55. At other ages there is either practical equality or a male excess, as at ages from 60 to 85 in the country generally. The deaths from malignant disease occurring in institutions are shown separately from those in the home, the object being to compare the experience of hospitals, where presumably the details of the cause of death have been generally confirmed by necropsy, with the certification of other deaths from causes where such facilities are as a rule wanting.

The increase of mortality from cancer of various organs differs. In both sexes the most rapid rates of increase are furnished by cancer of the alimentary tract, especially the intestines and stomach. Diseases of the female breast also claim a rapidly increasing number of victims, while mortality from uterine cancer is diminishing. The relation of mortality to marital condition is discussed in the text. It would appear that childbearing increases the risk of uterine and diminishes that of mammary cancer; it may therefore be expected that the present decrease of fertility will be accompanied by an increase of mammary rather than of uterine disease. Notwithstanding the general increase the mortality from cancer of the liver remains stationary. Secondary growths are mentioned with especial frequency in cases of breast cancer. Deaths thus certified amount to 33 per cent. in the case of the breast, whereas in the case of most other important sites the proportion falls short of 10 per cent. The conditions observed as complicating death from cancer are summarised in the report. Of those which do not appear dependent on the existence of a growth the most important are tuberculosis, diabetes, diseases of the circulatory system, Bright's disease, and childbirth.

MEDICINE AND THE LAW.

The Verdict "Guilty but Insane."

THE Court of Criminal Appeal, following its own ruling in R. *v.* Felstead, recently dismissed an appeal, or rather refused to hear it, in the case of a man named Taylor indicted for unlawful wounding at Worcester quarter sessions. Taylor had been for two years a certified lunatic in Powick Asylum, of which he was an inmate when the assault with which he was charged was committed. When he was put up to plead he made rambling statements, but "after some little pressure from his counsel," to quote from the *Times* report, he pleaded guilty. Counsel for the prosecution, however, suggested that a plea of "Guilty" in such circumstances ought not to be accepted, and urged that a plea of "Not Guilty" should be entered, and the prisoner tried in order to obtain the verdict of the jury as to the state of his mind at the time of the offence. This proposal was adopted, the case was gone into, and a verdict of "Guilty but insane" was returned. The prisoner accordingly was ordered to be detained during His Majesty's pleasure, a case being stated by the bench in order to allow a decision to be obtained whether in the circumstances described above the verdict mentioned could be returned. In the Court of Criminal Appeal the preliminary point was taken, that in accordance with the decision in Felstead's case the verdict "Guilty but insane" did not constitute a conviction, and that Taylor not having been convicted could not appeal. Taylor's counsel, on the other hand, relied upon his having pleaded guilty, and declared that he had never withdrawn that plea. He argued that being convicted on his own confession his client had the right to appeal. The court upheld the preliminary point mentioned and decided that it had no jurisdiction to hear the appeal, basing its decision on the fact that the case had been heard and the verdict recorded. The Lord Chief Justice, however, in delivering judgment, expressed the opinion that through the law being as Felstead's case declared it to be, difficulties arose which were probably not foreseen when the Criminal Appeal Act, 1907, was passed. These difficulties, his lordship said, could only be removed by the legislature, which some day might see fit to amend the law. The result in this case was that no decision was given as to the question which the appellant's counsel tried to raise, that when once the prisoner had pleaded "Guilty" the court had no right to enter a plea of "Not Guilty" and try the question of his sanity. There may be a certain convenience in this course being adopted, for it can hardly be right that a lunatic with dangerous propensities should be able by saying the word "guilty" to escape the means provided by the law for restraining him in the future. At the same time it is hardly satisfactory that in so important a case as one involving the question of a man's sanity neither the exercise of its discretion by the court nor the verdict of the jury should have been capable of being appealed against, and this not through the deliberate intention of the legislature but owing to an oversight.

The London Insurance Committee and the Allotment of Insured Persons.

The action of Mr. H. Bazett against the London Insurance Committee, based upon the failure of the latter to assign to medical men on the panel insured persons who had not selected their medical attendants, was tried by Mr. Justice Darling and a special jury recently. The plaintiff asked for a mandamus ordering the Insurance Committee to assign the persons referred to, as contemplated by the Insurance Act, and claimed damages for the Committee's failure to do so. The defendants alleged that it was absolutely impossible for them to assign the insured persons who had not chosen medical men, the system of registration being so involved and the insured population of so fluctuating a character, the constant changes of address rendering it extremely difficult, if not impracticable, to keep abreast of the alterations. It was stated by the clerk of the committee that at one time 300 clerks had been engaged upon the registers. The same witness said that out of 1200 medical men interested only five had objected to the method adopted for distributing the surplus funds. The jury intimated that they had made up their minds in favour of the defendants, but Mr. Bazett persevered with his case a little longer. Mr. Justice Darling finally intimated that in his view the legal maxim applied, "*Lex non cogit ad impossibilia,*" and that the defendants had done everything in their power to carry out the regulations. The jury then found for the defendants. Apparently those who framed an Act of Parliament have made the mistake of imposing an impossible task upon the bodies to whom the task of administration was to be entrusted, and a way out of the difficulty has been found which must be accepted, although, in the opinion of Mr. Danckwerts, it was not legally justifiable. Presumably it would not be impossible so to increase the clerical staff of even the London Committee as to enable the work to be done, but the question would naturally arise whether the result would be worth the cost involved.

THE NATIONAL INSURANCE ACT.

Panel Patients during War.

AT a meeting of the West Riding Insurance Committee recently the question of the provision of medical aid for panel patients whose selected practitioner had undertaken military service was raised by a member, Mr. J. W. Waterhouse. He suggested that where a member of the panel had gone to the front the insured persons affected should be entitled to medical benefit from any practitioner in the immediate neighbourhood, or at least should be allowed to make their choice, and be assigned accordingly. Dr. J. Russell observed that the practice had been for the committee to send a post-card to the patient giving him the name of the medical man who would take him over, and it was stated that this practice had worked well. Probably in many instances patients are satisfied to do as they are told, but the matter is not an easy one, and several considerations are involved. On the one hand a medical man may have undertaken the work of a friend, intending to safeguard his interests with regard to patients whether insured or not, and from the point of view of the absent practitioner it would be right that his patients should all be attended by his selected substitute. There can, however, in such a case be no compulsion except for insured patients, and it may be questioned whether there ought to be for them, when it is remembered that they originally selected a particular practitioner and that free choice of a medical attendant is one of the points upon which the medical profession has all along insisted. Let us hope that if any difficulty arises it will not be of long duration, and that at any rate there will be no question as to securing the return of the insured to their original medical attendants when these resume civil life. At the recent general meeting of the Camberwell Insurance Practitioners' Association a resolution was carried "that insured persons who may wish to transfer from the lists of doctors on active service should not be accepted on their lists by other doctors under any circumstances." It was pointed out by Dr. G. B. Batten that this implied that a medical man should refuse to treat as an insured person the patient of a colleague on the panel after the war was over. It did not imply refusing to treat such patients during the war; they must only not be accepted permanently.

Hearts of Oak Society and Insurance.

At the annual meeting of the Hearts of Oak Benefit Society it was stated, with regard to State members, that so far as men were concerned the payments for sickness benefit had amounted to 92 and 91 per cent. of the sums estimated for 1913 and 1914 respectively. The sickness benefit for women had been slightly in excess of what had been expected, amounting to 106 per cent. of the estimate in 1913 and 108 per cent. for 1914. The number of members of the society before the passing of the Insurance Act, 1911, who under it had become insured persons had been 176,000, and of these only 96,000 had reduced their contributions. The Act had, however, imposed great difficulties upon the society, and had accentuated the problem of over-insurance.

Excessive Prescribing: Difficulties of Investigation.

The London Panel Committee, at a special meeting on June 1st, decided, in view of the heavy expenditure of time and money involved in the investigation of representations by the Pharmaceutical Committee as to alleged excessive prescribing, to limit in future the amount of time spent upon this work. The Pharmacy Subcommittee pointed out that representations had yet to be received in respect of the second part of 1914, and no useful purpose was served in discussing with practitioners prescriptions written more than a year ago. It was highly desirable that every practitioner on the panel should be informed monthly of the average cost of his prescriptions. If investigations into about 500 practitioners' scripts were continued for a whole year, as at present, the funds of the committee would be swallowed up in dealing with this branch of its work. The committee decided to inform the Pharmaceutical Committee that it would deal with the most recent prescriptions submitted and that for the present the number of separate cases investigated must be limited to 50 in each three months. The committee also resolved to withdraw from the arrangement by which it shares with the Insurance Committee and the Pharmaceutical Committee the cost of the examination of prescriptions. The reasons given were that no onus rested on the Panel Committee to contribute towards mere arithmetical checking, and that the work done under this arrangement did not save the time of the Panel Committee when investigating allegations of excessive prescribing.

The London Panel Committee and the War.

The London Panel Committee has appointed a special section to consider and report as to the steps which should be taken to enable practitioners on the panel to render the greatest possible assistance in connexion with the war. Inquiry is to be made as to the manner in which the Panel Committee may most usefully coöperate with the British Medical Association in its efforts in the matter. Dr. C. W. Hogarth has resigned the chairmanship of the Panel Committee.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned has been granted a commission as temporary Surgeon in His Majesty's Fleet: John Paxton (dated May 21st).

The seniority of temporary Surgeon Jack Rupert Law Willis has been antedated to August 22nd.

The following appointments have been notified:—Temporary Surgeons: M. O. Raven to the hospital ship *China;* and W. L. Coullie to the *Birmingham.*

ARMY MEDICAL SERVICE.

Surgeon-General Sir David Bruce, C.B., F.R.S., is retained on the Active List, under the provisions of Article 120, Royal Warrant for Pay and Promotion, and to be supernumerary (dated May 29th).

Captain Charles A. Ballance, M.V.O., Royal Army Medical Corps, Territorial Force, to be temporary Colonel (dated May 18th).

ROYAL ARMY MEDICAL CORPS.

The undermentioned are granted the temporary rank of Major whilst serving with the Northumberland War Hospital:—Hector Duncan Macphail (dated May 12th), Cuthbert Umfreville Laws (dated May 16th), and Charles D'Oyly Grange (dated May 17th).

The undermentioned are granted temporary honorary rank whilst serving with the British Red Cross Society in France:—As Lieutenant-Colonel: Edward Stewart (dated May 29th). As Lieutenant: Edward Harman Hicks (dated May 29th).

Major Harold S. Peeke, Reserve of Officers, Royal Army Medical Corps, to be temporary Lieutenant-Colonel whilst serving with the Liverpool Merchants' Mobile Hospital (dated March 24th).

Edwin Goodall to be temporary Lieutenant-Colonel whilst employed at the Welsh Metropolitan War Hospital (dated May 1st).

The undermentioned are granted temporary rank whilst employed at the Lord Derby War Hospital:—As Lieutenant-Colonel: Alexander Simpson (dated April 1st). As Major: Frederick Millar Rodgers (dated May 24th). Alexander McLean Cato to be temporary Lieutenant (dated May 21st).

The undermentioned having ceased duty with the Queen Mary's Convalescent Home for British Officers, Nice, relinquish their commissions:—Dated 30th April: Temporary Major Samuel Macken and temporary Captains Henry S. C. Starkey and Frederick P. Nunneley.

Temporary Lieutenant John Sydney Rowlands to be temporary Captain whilst serving with the Welsh Hospital (dated May 28th). Rupert Farrant to be temporary Lieutenant (dated May 13th).

The appointment to a temporary Captaincy of John P. Campbell, late Captain 10th (Cyclist) Battalion, The Royal Scots (Lothian Regiment), Territorial Force, is antedated to April 1st, 1915).

The undermentioned to be temporary Lieutenants:—Dated March 12th: James Rashid Wortabet. Dated March 21st: Charles Montagu Harris. Dated March 23rd: Norman Edward Packer, Charles Owen Donovan, John Thomson Anderson, Robert Burnside Carter, Eric Phillip Blashki, John Lloyd Digby, Norman McAlister Gregg, Eustace Townley Pinhey, Norman Walford Broughton, Sydney William Gardiner Ratcliff, Clive Farranridge, and Arthur Wilmot Raymond. Dated March 26th: Harold John Penny, John Joseph O'Neill, and Brian William Wibberley. Dated April 4th: Bruce Maitland Carruthers, Gordon Alick Renwick, John Roberts MacCulloch, Charles Goldsborough Adams, Walter Francis Stewart Yeates, Charles Horsfall Armitage, Charles Reginald Ralston Huxtable, Francis James Fahy, Hugh Alton Chandos Wall, and Archibald Warden Graves Murray. Dated April 6th: Ernest Robertson, Basil Walter Cohen, Norman Charles Talbot, Colin Hasler Martin, Alexander Hugh Melville, Frederick Harold Moran, Archibald Simpson Anderson, and Harold Whitfield Ward. Dated April 7th: Hugh Meyrick Meyrick-Jones and William Stuart Hawthorne. Lewis Wilson Shelly (dated May 24th).

The undermentioned to be temporary Lieutenants whilst serving with the British Red Cross Hospital, Netley: Gordon Normanby Brandon (dated May 18th) and William Burt (dated May 23rd).

Temporary Lieutenant Isidore J. Block relinquishes his commission (dated May 4th).

SPECIAL RESERVE OF OFFICERS: SUPPLEMENTARY TO REGULAR UNITS OR CORPS.

Royal Army Medical Corps.

The undermentioned Lieutenants are confirmed in their rank:—Peter MacCallum, Gilbert W. Rose, Donald C. Scott, James S. Robinson, and Stanley B. King.

Cadet Serjeant George Gibson Cooper, from the Glasgow University Contingent, Officers Training Corps, to be Lieutenant (on probation).

TERRITORIAL FORCE.

Army Medical Services.

Captain William J. Hoyten, from 1st East Anglian Field Ambulance, to be Deputy Assistant Director of Medical Services, South Midland (Reserve) Division, with the temporary rank of Major.

Royal Army Medical Corps.

3rd Southern General Hospital: Hugh Anthony Bulstrode Whitelocke to be Lieutenant.

1st Lowland Field Ambulance: Frank Morton Robertson to be Lieutenant.

2nd Lowland Field Ambulance: To be Lieutenants: William Grove and William Jack Scade.

1st North Midland Field Ambulance: Captain Frederick W. Johnson, from Attached to Units other than Medical Units, to be Major (temporary).

3rd Northern General Hospital: Captain Arthur G. Yates to be Major.

1st Southern General Hospital: Major James T. J. Morrison is restored to the establishment. To be Lieutenants: Herbert Charles Horace Bracey and Arthur Harry Newton. Edward Musgrave Woodman (late temporary Lieutenant, Royal Army Medical Corps) to be Captain, whose services will be available on mobilisation.

2nd Southern General Hospital: Lieutenant James G. McLannahan, from 3rd South Midland Field Ambulance, to be Captain on the permanent personnel.

Sanitary Service: Alexander Gregor to be Captain, whose services will be available on mobilisation.

1st London (City of London) Sanitary Company: Lieutenant John H. Baldwin to be temporary Captain. To be Lieutenants: Private John Golding, from the 28th (County of London) Battalion, The London Regiment (Artists Rifles), and Gilbert Norman Anderson.

Lowland Divisional Sanitary Section: Lieutenant Thomas J. Mackie, from Attached to Units other than Medical Units, to be Lieutenant.

Lowland Casualty Clearing Station: Major George Robert Livingston, from Attached to Units other than Medical Units, to be Major. To be Lieutenants: Lieutenant Stuart Robertson, from the 1st Lowland Field Ambulance; Lieutenant Stephen Anderson MacPhee, from the 2nd Lowland Field Ambulance; Lieutenant Adam Rankine, from the 1st Lowland Field Ambulance; and William Cullen.

West Riding Casualty Clearing Station: Major Louis P. Demetriadi, from Attached to Units other than Medical Units, to be Lieutenant-Colonel (temporary).

2nd Home Counties Field Ambulance: Major Antony A. Martin to be temporary Lieutenant-Colonel.

West Riding Divisional Sanitary Section: Captain Cuthbert B. Moss-Blundell, from list of Sanitary Officers available on mobilisation, to be Captain.

Northumbrian Casualty Clearing Station: Major William A. Wetwan to be temporary Lieutenant-Colonel.

North Midland Mounted Brigade Field Ambulance: Arthur Avent (late Lieutenant of this Unit) to be Captain (temporary).

Yorkshire Mounted Brigade Field Ambulance: Captain and Honorary Major Alfred Hugh Benson, Retired List (late Royal Army Medical Corps (Militia)) to be Captain (temporary). Joseph Charles Denvir to be Dieutenant.

3rd North Midland Field Ambulance: James Edwin Wilson to be Lieutenant.

1st West Riding Field Ambulance: Lieutenant Herbert B. Pope to be temporary Captain.

5th Northern General Hospital: The undermentioned to be Captains, whose services will be available on mobilisation: Everard Harrison, Henry Mason, Neville Ivens Spriggs, Ernest William Holyoak, and Frederick Valentine Milburn.

Highland Casualty Clearing Station: John Innes (late Captain, 2nd Highland Field Ambulance) to be Captain (temporary).

2nd East Anglian Field Ambulance: Captain Dudley William Boswell to be temporary Major.

3rd Home Counties Field Ambulance: John Francis Molyneux to be Lieutenant.

2nd West Lancashire Field Ambulance: Captain Walter L. Hawksley to be temporary Major.

3rd Lowland Field Ambulance: Captain James Young to be temporary Major.

4th London General Hospital: Major William A. Turner is restored to the establishment.

1st Northern General Hospital: William Stott to be Lieutenant.

1st Western General Hospital: Walter Charles Oram to be Captain, whose services will be available on mobilisation. Charles Philip Brentnall to be Lieutenant. Leslie Oldershaw to be Lieutenant.

2nd Western General Hospital: Harry Platt to be Captain, whose services will be available on mobilisation.

Attached to Units other than Medical Units.—Major Robert J. R. C. Simons is seconded. To be Captains: Temporary Captain John B. Bate and Lieutenant Hugh Paterson. To be Lieutenants: David Alexander Ross Haddon (late Lieutenant, 9th (Highlanders) Battalion, The Royal Scots (Lothian Regiment)), Lieutenant John J. Porter (from 3rd Welsh Field Ambulance), William Hall Calvert (late Surgeon-Lieutenant, 1st Roxburgh and Selkirk (The Border Rifle Volunteer Corps)), John K. Brownlees, Leonard Herbert Henry Boys, Thomas Sprot Allan (late Surgeon-Lieutenant, 1st Volunteer Battalion, Middlesex Regiment), and William Joseph Lacy-Hickey. Lieutenant George W. Mason resigns his commission on account of ill-health.

TERRITORIAL FORCE RESERVE.

Royal Army Medical Corps.

Lieutenant-Colonel William McGregor Young, from the West Riding Casualty Clearing Station, to be Lieutenant-Colonel.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8530 births and 5340 deaths were registered during the week ended Saturday, May 22nd. The annual rate of mortality in these towns, which had steadily declined from 19·9 to 14·2 per 1000 in the six preceding weeks, rose in the week under notice to 15·4 per 1000 of their aggregate population, estimated at 18,136,180 persons at the middle of last year. During the first seven weeks of the current quarter the mean annual death-rate in these towns averaged 17·0, against a corresponding rate of 17·7 per 1000 in London. The annual death-rate in the week under review ranged from 7·9 in Wimbledon, 8·6 in Oxford, 8·8 in Edmonton and in Rhondda, 9·3 in East Ham, in Reading, and in Bolton, and 9·4 in Leyton, to 23·9 in Wigan, 25·1 in Dewsbury, 25·8 in Gateshead, 28·9 in Middlesbrough, and 29·9 in Walsall.

The 5340 deaths from all causes were 386 in excess of the number in the previous week, and included 603 which were referred to the principal epidemic diseases, against numbers declining from 711 to 484 in the three preceding weeks. Of these 603 deaths, 309 resulted from measles, 137 from whooping-cough, 70 from infantile diarrhœal diseases, 51 from diphtheria, 20 from scarlet fever, 15 from enteric fever, and 1 from small-pox. The mean annual death-rate from these diseases was equal to 1·7, or 0·3 per 1000 more than in the previous week. The deaths attributed to measles, which had been 392, 276, and 238 in the three preceding weeks, rose to 309 in the week under notice, and caused the highest annual death-rates of 2·6 in St. Helens, 2·7 in Wolverhampton, 3·5 in Gateshead, 4·0 in Barrow-in-Furness, 4·2 in Sheffield, 4·4 in Sunderland, 5·5 in Walsall, and 7·0 in Middlesbrough. The deaths referred to whooping-cough, which had steadily declined from 167 to 105 in the six preceding weeks, rose to 137, and included 41 in London, 8 each in Wigan and Salford, 7 in Liverpool, 5 in Leeds, and 4 each in Bristol, Manchester, and Sheffield. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 73, 67, and 57 in the three preceding weeks, rose to 70, of which 15 were registered in London, 7 in Liverpool, 6 in Manchester, and 4 in Birmingham. The deaths attributed to diphtheria, which had been 56, 51, and 48 in the three preceding weeks, rose to 51, and included 15 in London, and 3 each in Manchester and Sheffield. The deaths referred to scarlet fever, which had been 34, 30, and 25 in the three preceding weeks, further fell to 20, of which 5 occurred in London, and 2 each in Stoke-on-Trent and Manchester. The fatal cases of enteric fever, which had been 12, 12, and 11 in the three preceding weeks, rose to 15, and included 4 in London and 2 in Leeds. The death from small-pox was registered in Bristol.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2377, 2384, and 2332 at the end of the three preceding weeks, had further declined to 2286 on Saturday, May 22nd; 320 new cases were admitted during the week, against 316, 307, and 270 in the three preceding weeks. These hospitals also contained on the aforementioned date 1123 cases of diphtheria, 158 of measles, 55 of enteric fever, 12 of whooping-cough, and 1 of small-pox. The 1288 deaths from all causes in London were 33 in excess of the number in the previous week, and corresponded to an annual death-rate of 14·9 per 1000. The deaths referred to diseases of the respiratory system, which had declined from 469 to 227 in the five preceding weeks, further fell to 212 in the week under notice, but were 24 in excess of the number recorded in the corresponding week of last year.

Of the 5340 deaths from all causes in the 96 towns 235 resulted from different forms of violence and 380 were the subject of coroners' inquests, while 1546 occurred in public institutions. The causes of 46, or 0·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Sheffield, Leeds, Bristol, West Ham, Bradford, Hull, Newcastle-on-Tyne, and in 68 other smaller towns. Of the 46 uncertified causes of death, 9 were registered in Birmingham, 5 in Gillingham, 4 in Liverpool, and 3 each in Southport and Warrington.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,345,500 persons at the middle of this year, 1121 births and 724 deaths were registered during the week ended Saturday, May 22nd. The annual rate of mortality in these towns, which had been 20·2, 18·1, and 17·9 per 1000 in the three preceding weeks, further declined to 16·1 per 1000 in the week under notice. During the first seven weeks of the current quarter the mean annual death-rate in these towns averaged 18·9, against a corresponding rate of 17·0 per 1000 in the large English towns. Among the several towns the death-rate in the week under review ranged from 4·9 in Clydebank, 8·9 in Kirkcaldy, and 11·4 in Aberdeen, to 18·6 in Ayr, 18·8 in Motherwell, and 19·1 in Perth.

The 724 deaths from all causes were 83 fewer than the number in the previous week, and included 90 which were referred to the principal epidemic diseases, against numbers declining from 150 to 117 in the three preceding weeks. Of these 90 deaths, 40 resulted from whooping-cough, 36 from measles, 6 from scarlet fever, 5 from infantile diarrhœal diseases, 2 from diphtheria, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·0, against 1·7 per 1000 in the large English towns. The deaths attributed to whooping-cough, which had been 82, 65, and 45 in the three preceding weeks, further declined to 40 in the week under notice, and comprised 22 in Glasgow, 11 in Edinburgh, 4 in Dundee, 2 in Falkirk, and 1 in Motherwell. The deaths referred to measles, which had increased from 19 to 49 in the five preceding weeks, fell to 36, of which 26 occurred in Glasgow, 4 in Aberdeen, 3 in Dundee, 2 in Falkirk, and 1 in Perth. The fatal cases of scarlet fever, which had been 11, 7, and 6 in the three preceding weeks, were again 6 in week under review, and comprised 5 in Glasgow and 1 in Aberdeen. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 9, 15, and 9 in the three preceding weeks, further fell to 5, of which 2 were registered in Glasgow. The fatal cases of diphtheria were recorded in Glasgow and Edinburgh, and that of enteric fever in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 153, 118, and 121 in the three preceding weeks, fell to 117 in the week under notice, but were 10 in excess of the number recorded in the corresponding week of last year. The deaths attributed to violence numbered 21, against 23 and 26 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,212,380 persons at the middle of this year, 680 births and 425 deaths were registered during the week ended Saturday, May 22nd. The annual rate of mortality in these towns, which had been 19·1, 19·9, and 18·8 per 1000 in the three preceding weeks, fell to 18·3 per 1000 in the week under notice. During the first seven weeks of the current quarter the mean annual death-rate in these towns averaged 20·6, against corresponding rates of 17·0 and 18·9 per 1000 in the English and Scotch towns respectively. The death-rate in the week under review was equal to 20·8 in Dublin (against 14·9 in London and 18·0 in Glasgow), 16·7 in Belfast, 21·8 in Cork, 12·7 in Londonderry, 10·8 in Limerick, and 30·4 in Waterford, while in the 21 smaller towns the mean rate was equal to 16·1 per 1000.

The 425 deaths from all causes were 13 fewer than the number in the previous week, and included 24 which were referred to the principal epidemic diseases, against numbers declining from 41 to 27 in the four preceding weeks. Of these 24 deaths, 9 resulted from measles, 5 from whooping-cough, 4 each from scarlet fever and infantile diarrhœal diseases, and 2 from diphtheria, but not one from enteric fever or from small-pox. The mean annual death-rate from these diseases was equal to 1·0, against corresponding rates of 1·7 and 2·0 per 1000 in the English and Scotch towns respectively. The deaths attributed to measles, which had declined from 13 to 4 in the four preceding weeks, rose to 9 in the week under notice, and comprised 4 each in Dublin and Belfast and 1 in Cork. The deaths referred to whooping-cough, which had been 9, 9, and 10 in the three preceding weeks, fell to 5, and included 3 in Dublin. The 4 fatal cases of scarlet fever, of which 3 occurred in Waterford and 1 in Lisburn, were 2 in excess of the average in the earlier weeks of the quarter. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 10, 9, and 8 in the three preceding weeks, further fell to 4, and were all registered in Dublin. The fatal cases of diphtheria were recorded in Dublin and Kilkenny.

The deaths referred to diseases of the respiratory system, which had been 84, 76, and 82 in the three preceding weeks, further rose to 93 in the week under notice. Of the 425 deaths from all causes, 137, or 32 per cent., occurred in public institutions, and 8 were attributed to different forms of violence. The causes of 12, or 2·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the large English towns the proportion of uncertified causes did not exceed 0·9 per cent.

Correspondence.

"Audi alteram partem."

THE PULSUS ALTERNANS.

To the Editor of THE LANCET.

SIR,—Dr. C. O. Hawthorne's interesting paper in THE LANCET of May 29th opens up a question that I have often asked myself: When is a pulsus alternans not a pulsus alternans, so far as its now usually accepted gravity of prognosis goes? Dr. Hawthorne, alluding to this, gives at the end of his paper the case of a young woman who has not died as she should have done, and his earlier remarks and the tracings given from sphygmograph and manometer seem to me to suggest the answer. In thus showing that a pulsus alternans is of quite a common occurrence, he describes what surely must be the common experience of us all. Everyone must be familiar with the fact that at the radial pulse at the wrist every heart beat need not have an equivalent value, and this variation may range from complete intermission down to a lessening of force that cannot be recognised by the finger. One had almost said when we are dealing with a muscular organ such as the heart with the variety of minor details that energise it and detract from its nervous supplies, it could hardly be otherwise. This in nowise detracts from the value of the observation that there is a pulsus alternans that has a grave significance; it does go to show that one may expect at times a pulsus alternans that has not such an ominous outlook. And surely there must be many who have lived—well! to pre-senility—who have met with this condition many a time, with *a* form but not *the* grave form of pulsus alternans. I have also met occasionally with a sort of double pulsus alternans, two full beats followed by two small beats, that had no serious meaning.

Then how are we to distinguish between the two? I may leave others to answer this question. For myself I shall only venture to suggest that the serious form generally goes with signs of cardiac failure, whilst the alternation to which I am directing attention comes and goes—sometimes the rhythm may change two or three times in one examination—and maybe in quite young people who have no signs whatever of any cardiac distress. It is clearly a neuromuscular eccentricity of action that has no serious meaning. There are other points in Dr. Hawthorne's paper quite well worth taking up, and chief of them, to my mind, is the comparative value of the sphygmograph and the manometer. It has always seemed to me that the latter is a much less precise and reliable instrument than the sphygmograph which has so much yielded place to it. There can be no doubt that the facts of the pressure gauge, if so I may call the manometer, require the most careful valuation before drawing inferences therefrom.

I am, Sir, yours faithfully,

May 31st, 1915. JAMES F. GOODHART.

THE USE OF ATROPINE IN GASSED PATIENTS.

To the Editor of THE LANCET.

SIR,—I have just been reading Dr. Douglas V. Cow's article on this subject in THE LANCET of May 29th, and am particularly interested in his experiments. It had struck me that atropine might be of use, for I have taken it for acute bronchitis with the typical tightness across the chest and difficulty in breathing, and the mixture which used to give the greatest and quickest relief was one containing liq. atrop. sulph. ♏ ix. (which must be fresh) ad ℥ vi.; dose, ℥ss.

As a student, when making chlorine gas, although we used draught cupboards, I inhaled the gas rather too freely, and I well remember the tightness across the chest and uncomfortably difficult breathing it produced. The symptoms got worse after I had got home—about two hours after I should think. If I had to face chlorine, besides a mask I would provide myself with some liq. atrop. sulph., and I would take one dose before the cloud was on me. Dr. Cow's article would make me more inclined than ever to try atropine.

I am, Sir, yours faithfully,

IDA C. TENGELY, M.D. Lond.

Bishop's Stortford, May 29th, 1915.

THE MEDICAL DEFENCE UNION AND THE NATIONAL INSURANCE COMMISSIONERS.

To the Editor of THE LANCET.

SIR,—The letter written by Dr. A. E. Larking in your issue of May 29th makes it clear to me that he has failed to understand the position which the Medical Defence Union has taken up in respect of the surcharging of panel practitioners. The Union, by raising certain actions on behalf of members who are panel practitioners, is not attacking the National Insurance Acts or seeking to hamper the working of the Acts, but is merely endeavouring to protect its members against the effect of certain regulations of the Commissioners which the Union is advised are not in conformity with the Acts and are therefore *ultra vires*, and also to defend them against any action of the Insurance Committees which may appear to be arbitrary and wrongful. The Union therefore desires to take the opinion of the court as to the regulations and the procedure of Insurance Committees in administering the Acts.

We have already obtained a decision by the Commissioners in the Sheffield case, whereby the proceedings taken by the Panel Committee in surcharging were quashed at our instance.

In raising test actions in the High Court we are merely seeking to confirm and to extend the scope of that decision of the Commissioners. We are not seeking to destroy the Act; Parliament alone can either amend or annul it. As long as the Act exists it is imperative that we should, on behalf of our members, see that it is carried out legally and impartially; and we shall continue this duty, I trust, as long as the Act or the Medical Defence Union lasts. Dr. Larking appears to consider that the administration of the Act is unassailable; well, that is his opinion, but it is not mine, which is based upon the record of past successes in the High Court and elsewhere. If Dr. Larking could only see and read my daily correspondence from panel practitioners he would realise that a rapid rise of discontent as to the working of the Act is setting in all over the country.

I am, Sir, yours faithfully,

A. GEORGE BATEMAN.

Trafalgar-square, W.C., June 2nd, 1915.

To the Editor of THE LANCET.

SIR,—With regard to the letter by Dr. A. G. Bateman appearing in your issue of May 22nd, it will be granted that for the moment conservation of energy is imperative against the Empire's foe, and litigation at home should not be encouraged. Tact and judgment must be welcomed in this crisis for the greatest benefit to the community at the least expense, for the avoidance of surcharge for extravagance in prescribing for insured persons, and for steering clear of other technicalities in connexion with the working of the Act.

Is it possible to fix a Government estimate without a definite capitation grant for medicaments? The importance, however, of diet, regimen, pharmacology, and therapeutics, which form the staple practice of most practitioners, deserves a higher status in the curriculum, and such might with advantage be studied in the light of economy as well as efficiency and practicability. Knowledge and experience would then counteract indulgence in fancy and expensive prescribing.

I am, Sir, yours faithfully,

Gower-street, W.C., May 26th, 1915. DENNIS VINRACE.

To the Editor of THE LANCET.

SIR,—With regard to the letter on this subject appearing in your issue of May 29th, as a non-panel man I also strongly oppose using the funds of the Medical Defence Union for helping panel doctors out of the mire which they brought on themselves by signing the National Insurance pledge and then going back on their written word. Rather would I see it used in attempting to punish those half a dozen doctors who at the beginning started the rout. I thank heaven every day that I am no servant of any Insurance Committee, and that I have never gone back on my word.

I am, Sir, yours faithfully,

Streatham, S.W. May 30th, 1915. E. H. WORTH.

TREATMENT OF POST-INFLUENZAL COUGH BY BRITISH-MADE LYSOL.

To the Editor of THE LANCET.

SIR,—In company with thousands of others I had my yearly attack of influenza six weeks ago. I remained in bed two days, then went to work again as usual, but felt quite limp for the next three weeks; at the end of which time I began to pick up, but never lost a troublesome cough. It kept me awake at night, and in the morning I coughed until I had got rid of quantities of mucus of all consistencies. Where it all came from I am at a loss to understand; it collected in the upper part of the trachea and larynx. I had no chest symptoms.

I had on my table a bottle of British-made lysol sent as a sample. I was only interested in it because it was stated that used as an ointment, 10 per cent., it cured the worst cases of scabies, and I am getting it tried for mange and other skin troubles in dogs, so far with favourable results. Two days ago I was smelling at the bottle for some reason or other when it struck me that it might be good for my cough. I put about 4 oz. of boiling water into a small jug and poured on it about a drachm of the lysol and then inhaled the fumes for about five minutes. They made my nose and throat tingle a little but had no other unpleasant effect. I coughed a bit afterwards, then my cough stopped and has given me very little trouble since. I slept quite comfortably that night and coughed about twice the next morning instead of 30 or 40 times. I slept all the next night without waking and did not cough the next morning (May 16th).

On that day I tried myself pretty high. At 5 o'clock I paraded with about 200 other special constables at Marlborough-street police station; 99 of us were marched to Oxford Circus station, from there we went by train to Bow, marched from the railway station to the police station, were mustered with others in the station yard, and for the next four hours were in the streets in pouring rain and puddles galore under foot, or in the station in rooms reeking of wet clothing, with "draughts to the right of us, draughts to the left of us, draughts in front of us," and it may be added "draughts behind us." At 11 o'clock we were dismissed and returned to Marlborough-street by the same route. I got to bed at 12.45 and slept soundly till 7. The following day I had no cough.

There may have been other causes in operation—for one thing the weather got much milder and the wind went out of the north-east—but I was inclined to believe that inhalation of lysol cured my cough, and I was convinced of it after trying it again. A night later I was coughing again, and I feel I must sound a note of caution here. I fancy it may have a stupefying effect. I used the remedy in an ordinary spirit boiler, and as soon as a good cloud of steam began to rise put my nose and mouth well into it, and as near the boiling fluid as possible, and breathed deeply. In about two minutes I got drowsy and was very near dipping the end of my nose into the hot liquid, which would no doubt have proved an excellent restorative. There may be a source of fallacy here, because it was my bed-time, and I had been in the streets for the greater part of the two preceding nights, and could have slept standing up against a wall. Another thing, I am not sure that lysol used in too strong solution or inhaled for too long at a time may not be irritating to the respiratory mucous membrane, for on the last occasion I experienced something of the sensation which all of us who can remember when there were no other lucifer matches than the old-fashioned sulphur matches have felt if we tried to light a pipe or perform any such operation near the nose and mouth without waiting till the brimstone had burnt off.

I have given my experience for what it is worth, and hope it may be of use to others. I would suggest that the solution I used was too strong; it is somewhere between 1–60 and 1–30, very likely more, and I expect 1–100 is plenty strong enough. I did not measure the lysol; I have measured the whole mixture I used and it is 4 oz.

I am, Sir, yours faithfully,

CHARLES HIGGENS, F.R.C.S. Eng.

Brook-street, W., May 28th, 1915.

PS.—The inhalation might be tried in whooping-cough.

PRESENTATIONS TO MEDICAL MEN.—At a meeting of the members of the Totterdown and Imperial Divisions of the City of Bristol Corps, St. John Ambulance Brigade, held on May 21st, the Deputy Commissioner (Mr. J. S. Griffiths, M.R.C.S., L.R.C.P. Lond.), on behalf of the divisions, presented Mr. Joseph John Scammell Lucas, B.A., M.D. Lond., M.R.C.S., L.R.C.P., with a framed illuminated address and a walking stick "as a small appreciation of his services to the class and in the divisions for many years."—The members of the Brighton Division of the St. John Ambulance Association have just presented Mr. J. A. Amherst Orlebar, M.B., B.C. Cantab., with a silver cigarette box "as a token of their appreciation and esteem." Dr. Orlebar is leaving England on active service.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

SUBSCRIPTIONS OF THE WEEK.

WE call special attention to the generous and fruitful action of the Sunderland doctors who have paid into the Fund their fees for the examination of recruits. Last week we acknowledged from 14 of these gentlemen a donation in the aggregate amounting to no less than £142 2*s.* 6*d.* This week from 16 gentlemen the Fund has received a cheque for close upon £170, making over £300 received from this one source. Considering the numberless directions in which the work of medical men at the present moment is being increased in bulk and curtailed in emolument, the action of the Sunderland practitioners is a very open-handed one.

THE DISTRIBUTION OF THE FUND.

On Friday, May 28th, the recent official reports of three séances of the Aide et Protection aux Médecins et Pharmaciens Belges Sinistrés reached us through the kind offices of Professor Jacobs. This, it will be remembered, is the title of the committee formed in Belgium for ascertaining where the need is greatest among the Belgian doctors and pharmacists and for providing systematic relief. The president is Dr. Péchère, the secretaries M. Delacre and M. Laruelle, and the office is in Brussels; and it is upon this body, now strongly organised, that the British Fund is relying for distribution of its resources in Belgium.[1] When a representative of the Aide et Protection aux Médecins et Pharmaciens Belges met the Central Committee of the British Fund late in March he explained the way in which the Belgian Committee were compiling information to guide them in their work, and it was then decided that a substantial sum of money should be despatched immediately to Belgium, through the medium of certain banks and with the help of Mr. Herbert Hoover, the chairman of the National Relief Fund. An acknowledgment of this money was received from Dr. Péchère, but without details as to its distribution. These are now briefly supplied through the reports of séances held on April 15th, 22nd, and 29th. The physicians and pharmacists relieved include such cases as the following, which have been extracted from the fourth report of M. Laruelle dealing with the medical men, and from the report of M. Breugelmans dealing with pharmacists:—

To Dr. C——, of D——, it proposes to make a grant of 700 fr. Dr. C—— has had his house burnt with all its contents. He was obliged to take refuge at C—— and afterwards at W——. D——, the population of which has been reduced to one half, shelters now only a population which is deprived of resources, not affording, therefore, any opportunity to practitioners to gain their livelihood.

To Dr. R——, of T——, a grant of 400 fr. Our old colleague (aged 86 years) has seen his house with all its contents burnt. He was obliged to take refuge at M——. He would accept the temporary aid of the Committee, not being able at the present time to realise his resources.

Madame D——, of T——. Husband killed; three houses burnt with the pharmacy. Took refuge with a servant in the dwelling of a cousin who had left for Nice before the war. Had 2000 fr. in ready cash when she departed from T——. Was obliged to live ten days at B—— with her husband suffering agonies. Had to pay after the death of the latter the expenses of living, nursing and attention, and the funeral expenses. Was obliged to borrow from one of her parents at B——, to-day himself deprived of resources, the money which served to provide the food of M. D—— and his servant in the borrowed dwelling which they occupy. Life of privation. Rarely eats meat. Has only one outfit of mourning bought at the commencement of her widowhood. Merits assistance which will be well bestowed. The Committee to grant 700 fr.

M. P. V. M——, of T——. Now at M—— and at S—— alternatively. The pharmacy and druggist's business completely burnt out. Family responsibilities: wife, five sons, and servant. The man who has suffered this loss is 51 years old, has personal resources which the war has much encroached upon. The Committee has decided to make a further inquiry to learn if the need for urgent intervention is corroborated.

All the recommendations of M. Laruelle and M. Breugelmans were agreed to.

The 50 cases of medical material, despatched last December by the Central British Committee, were found to have been of use to the medical men who were able to distribute them gratuitously to their poorer clients; they have been used exclusively in this way.

There was discussion at the séance of April 15th, and again on April 22nd, as to the most expeditious way of allocating the relief, and it was decided to rely on the reports of the delegates. At the séance of April 29th it was agreed to pay monthly subsidies to those who cannot support themselves, even if they have been relieved before.

THE RESPONSIBILITY OF GREAT BRITAIN TOWARDS BELGIUM.

A letter having reached the Central Committee from Dr. Riddle Goffe, of New York, through which it was clear that the attitude of the British Government in respect of its monthly subsidies to the American Commission for Relief in Belgium was misunderstood in the United States, the questions raised by Dr. Goffe were submitted to the British Foreign Office, from whom the following reply was received. It has been decided to publish the reply of the Foreign Office, as from certain references to the situation in American newspapers and publications it is evident that there is still a complete misunderstanding of what occurred, and this might act to the prejudice of any funds being raised in the United States.

Foreign Office, April 26th, 1915.

SIR,—With reference to your letter of the 21st instant, enclosing a copy of a letter from Dr. J. Riddle Goffe regarding the question of Belgian relief, I am directed by Secretary Sir E. Grey to inform you that your correspondent appears to allude to the following facts.

The work of the American Commission for Relief in Belgium consists of two departments—the Benevolent Department, which is concerned with the furnishing of foodstuffs to the destitute in Belgium, and the Provisioning Department, which is concerned with the purchase and sale of foodstuffs to the rest of the population who are still able to pay. The first department has been financed out of private contributions, except for a grant of £100,000 made by His Majesty's Government in October to start the work. The second department has been financed by the Belgian Government.

Last December the Commission asked His Majesty's Government to make a monthly contribution out of public funds to the Benevolent Department. After prolonged negotiations His Majesty's Government decided that they would not be justified in doing so, as it was found impossible to induce the German Government to abandon their extortionate levies of money on the Belgian population. This department of the Commission's work is, therefore, still financed out of private contributions. But your correspondent does not appear to be aware that out of the total private contributions in money and kind received by the Commission up to the date of their last report (April 17th), while the United States has with great generosity subscribed about £980,000, the British Empire has subscribed about £700,000, and this in addition to the military burdens borne by the Empire, the very large sums subscribed to the maintenance of Belgian refugees, and also the credits placed by His Majesty's Government at the disposal of the Belgian Government, out of which that Government is providing for the work of the Commission's Provisioning Department.

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[1] See THE LANCET, April 3rd, p. 718, and April 24th, p. 883.

As regards the non-interference by the German authorities with the Commission's imports, it must be pointed out that those authorities are thereby acting in their own interests, since the Commission is relieving them of a clear responsibility which they have refused to assume.

Apart altogether from the assistance consistently given in various ways by His Majesty's Government to the Commission, of which it is rather for the Commission itself than for His Majesty's Government to speak, Sir E. Grey feels it to be only just to private persons in this country and the British Dominions who have so largely subscribed to this work and are probably about to subscribe still more largely, that these facts should be made clear, and he has no objection to a copy of this letter being communicated to Dr. Goffe should you desire to do so.

I am, Sir, yours, &c.,
EYRE A. CROWE.

To Dr. S. Squire Sprigge, THE LANCET Offices, W.C.

THE WEEK'S SUBSCRIPTIONS.

The subscriptions received by Dr. Des Vœux up to Tuesday evening last, in addition to those previously acknowledged, are as follows:—

	£	s.	d.
Southern Branch, B.M.A. (per Dr. Jas. Green, Hon. Sec.) (seventh donation—total, £62 5s. 6d.)—			
Dr. J. P. Watkins ...	1	1	0
Sheffield and District Branch of Fund (per Dr. A. E. Naish (Hon. Sec.) (second donation—total, £350)	100	0	0
Knowle, Bristol, Doctors at (per Dr. H. F. Devis)	3	10	6
North of England Branch of Fund (per Dr. James Don and Mr. A. S. Perceval, Hon. Secs.) (twelfth donation—total, £686 7s.)—			
Dr. S. Vernon Robinson	1	1	0
Further fees for examination of recruits by members of Sunderland Division during 1914—			
Dr. McPherson	14	12	6
Dr. G. E. Welford ...	2	2	6
Dr. G. B. Morgan, jun.	2	17	6
Dr. J. C. Hamilton ...	8	2	6
Dr. G. Murray	7	17	6
Dr. W. K. Russell ...	10	7	6
Dr. J. B. Morton ...	20	2	6
Dr. W. Hunter	16	15	0
Dr. R. Stobo...	12	0	0
Dr. J. Martin	6	17	6
Dr. J. Smith	7	12	6
Dr. J. A. Ross	9	10	0
Dr. W. H. Maling ...	16	10	0
Dr. R. H. Dix	5	7	6
Dr. W. Hay	18	10	0
Dr. S. McNaughton ...	9	7	6
Dr. C. A. Rayne	3	3	0
North-East London Pharmacists' Association, collected by (per Mr. W. A. Scott)—			
Mr. T. F. Tabor	1	15	0
Chemists' Assistants Association (per Mr. E. Thompson)	5	0	0
"Formulæ" (per Mr. A. Chapman)	0	10	0
Mr. A. Chapman	0	13	11
Australasian Pharmaceutical Conference (per the Agent-General)—			
Victoria	50	0	0
South Australia... ...	34	0	0

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham-gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Ltd.

THE NATIONAL PEOPLE'S PALACES ASSOCIATION.—This association, the object of which is to extend to the working classes in industrial districts the comfort and brightness offered by tea and coffee houses and general cafés, has now been registered under the Industrial and Provident Societies Acts for the supply of non-alcoholic refreshments at popular prices in armament works and at "palaces" to be established in suitable localities. Mr. Lloyd George has indicated his approval of the association's aims, while Mr. Bonar Law and Mr. Steel-Maitland are associated with the enterprise. Full information may be obtained upon application to the secretary of the National People's Palaces Association, 1, Albemarle-street, Piccadilly, London, W.

The War.

THE CASUALTY LIST.

THE following names of medical officers appear in the casualty lists published since our last issue:—

Killed: Surgeon Frederick W. Quirk, R.N. (on the *Princess Irene*).

Died of wounds: Captain J. C. Matheson, 5th Australian Medical Corps.

Wounded: Lieutenant C. M. Smith (attached 8th Royal Scots, T.F.), Lieutenant J. P. Mitchell, Captain L. C. Hayes (also gas poisoning), Captain E. U. Russell, Captain T. O. Thompson (attached 18th Hussars), Lieutenant G. D. Maclean, all of R.A.M.C.; Major H. C. de Legh (attached 4th Yorks Regiment), Captain H. B. Cunningham, Captain W. E. F. Tinley (attached R.F.A.), Captain J. Murdoch, all of R.A.M.C., T.F.; Captain L. W. Jeffries, 4th Australian Field Ambulance; Surgeon E. G. Schlesinger, Surgeon W. J. McCracken, both R.N.

Captain Stephen Field, R.A.M.C., who was announced in our issue of May 22nd as having been killed in action, died at the Prisoners' Camp, Wittenberg, Saxony, which is one of the camps reported as infected with typhus fever.

DEATHS AMONG THE SONS OF MEDICAL MEN.

The following names must be added to the sons of medical men who have fallen in the war: Lieutenant G. G. Hodgson, elder son of Dr. G. Hodgson, of Chertsey; Lieutenant C. G. Harper, eldest son of Dr. J. Harper, of Rosary-gardens, London, S.W.; Lieutenant J. E. B. Miller, only son of Dr. J. E. Miller, of Londonderry; Lieutenant N. C. MacLehose, younger son of Dr. N. M. MacLehose, of Harley-street, London, W.; and Lieutenant R. W. H. Empson, elder son of Dr. J. Empson, of Milborne Port, Somerset.

THE HONOURS LIST.

The list of honours published on the birthday of King George has close reference to the war, most of the recipients being, as might have been expected, engaged in one way or another in leading the national energies in the great struggle. Medicine is but sparsely represented among these leaders, for enormously valuable to the cause as medicine is, in personnel its numbers are small; the fact that but few medical names appear in the list indicates that in every branch of military activity special services have to be recognised.

We congratulate the following:—Surgeon-General T. M. Corker is appointed C.B.; Dr. A. W. G. Bagshawe, director of the Tropical Diseases Bureau, is appointed C.M.G.—the value to our army of the organised study of tropical diseases has been very great; Major E. J. O'Neill (New Zealand Medical Corps) and Captain A. G. Butler (Australian Army Medical Corps) receive the D.S.O.; Lieutenant-Colonel C. C. S. Barry, I.M.S., is appointed C.I.E.; Lady Lukis, the wife of the Director-General of the Indian Medical Service, and Lieutenant-Colonel T. F. Pedley (Rangoon Port Defence Volunteers) receive the Kaisar-i-Hind medal; and Dr. J. E. A. Ferguson is appointed I.S.O.

We note elsewhere the knighthoods bestowed upon Sir James Mackenzie and Sir Frederick Needham, as being civilian honours,

THE SOUTH AFRICAN AMBULANCE HOSPITAL AT CANNES.

We have received from M. Réné Juta, the Secretary of this hospital, an account of the first and only South African unit in Europe, which is also probably the largest British hospital working for the French Service de Santé. It comprises 3 surgeons, 9 sisters, 10 nurses, 6 dressers, 1 accountant, 1 secretary, 4 motor drivers. It has 200 beds and 3 motor ambulances, all equipped and subscribed for in South Africa by private and public funds for work in Europe, in spite of the fact that the Union has recently had rebellion on its hands and is carrying on its own arduous campaign in German South-West Africa. The ambulance was accepted by the French Service de Santé, and its personnel were asked to equip and organise a base hospital at the Beau Rivage, Cannes. The hospital has been commended by the French Government, and is admirably equipped. The wounded come almost direct from the trenches of Verdun and the Argonne.

There are two committees, one in Cape Town with the Chief Justice as chairman, the other in London with Lord Gladstone as chairman, Lord Islington, honorary treasurer, and Mr. Wilson Fox (of the Chartered Company) as secretary. There is also a ladies' committee in London, of which Mrs. Lewis Harcourt is President. A bacteriological laboratory and X ray apparatus and outfit have been given to the hospital by the London committee. In addition the hospital has a dental surgery under a fully qualified dental surgeon. At the time of writing 193 patients have been admitted, with 2 deaths, while 61 patients have been sent home healed.

The South African Ambulance Hospital at Cannes.

CANADIAN MEDICAL MEN AND THE WAR.

One of our Canadian correspondents writes: "Medical men in Canada who are eager and anxious to go to the front read from time to time in the columns of THE LANCET of the 'dearth of medical officers' and of the dearth of medical men in the home country. They wonder how it is, when they have long since proffered their services, that it seems impossible to secure a commission, although many of them have taken emergency training to qualify them in some measure for usefulness. Up to April 1st, it has been stated, Canada had some 300 medical men in England or in France, either with the armies, in hospital service, or with the navy. Recently the University of Toronto General Hospital has gone abroad with some 40 to 50 medical men; McGill University, Montreal, has sent a similar or larger number. Queen's University, Kingston, and Laval University, Montreal and Quebec, have sent, or are sending their hospitals abroad. Lately Vancouver has offered to equip a hospital of some 1040 beds; Peterboro, Ont., one of 200 beds; Lambton County, Ontario, one of 200 beds. The Ontario Medical Council, through one of its members, Dr. Edmund E. King, Toronto, has selected some 50 or 60 medical men for the War Office. Thirty men have volunteered for service in Serbia. With all this splendid offering from the medical profession in Canada there are said to be hundreds on the waiting lists who are urgently desirous of work in any medical capacity. The provincial medical councils of Canada could yet supply several hundred men."

ITALY AND THE WAR: "THE PLEBISCITE OF THE PROFESSIONS."

From the Alps to Etna, every seat of learning and source of professional qualification (writes an Italian correspondent) has demonstrated, by word and deed, its whole-hearted sympathy with the Salandra-Sonnino administration in the policy which has placed the Third Italy by the side of the Triple Entente in the war against the Central Powers. Of the 21 universities which Italy numbers there is not one which has not declared its solidarity with the movement now in progress—mainly on the Venetian frontier and on the Adriatic seaboard—to complete the country's territorial integrity and to make meaningless the phrase "Italia Irredenta" (unredeemed Italy) and the agitation it has since 1866 inspired and justified. The last few weeks have witnessed what the leading Italian journals call "Il Plebiscito dei Professori"—a veritable plebiscite of the academic and professional interest throughout the kingdom—a "demonstration" which has reinforced, with signal unanimity and power, the various other interests, agricultural, industrial, and commercial, in baffling the Germano-Austrian diplomacy and in sending Italy, by the rupture of the ill-starred Triple Alliance, to the support of England, France, and Russia, in their antagonism to the policy whose watchword is "Deutschland über Alles."

Every Senatus Academicus has, collectively, subscribed to the manifesto organised to aid and abet the Government in its programme of intervention, and the names of the professoriate, published in full, have been for days past a feature in the leading journals. Conspicuous among these appear the signatures of the medical faculty in every school, metropolitan and provincial, and not a few of the signatories, when of the required age, have volunteered to serve at the front not only in ambulance work but, if need be, in the fighting line itself. There could not be a more significant proof of the patriotic spirit thus evoked than the correspondence that has passed between the organisers of the manifesto and such veterans in clinical and consultant practice as the leading members of the faculty at Naples and Rome, at Pisa and Bologna; and of these it may suffice to quote the letter of the illustrious pathologist of the last-named school, Professor Augusto Murri, addressed to Colonel Bernardi, director of the "Servizi Sanitari" of the local army corps.

> My Honoured Colleague,—I address myself to you, in this confidential strain, to assure you, with perfect frankness, that all of us of the Clinica Medica feel it our duty to coöperate, in whatever way seems best, in the defence of Italy if she should be called upon to intervene in this war. While all my assistants are already under statutory obligation so to intervene, I have only one such call, and that is my conscience. Be it the privilege or the misfortune attaching to age, be it what you will, I must needs obey the command of conscience; and, therefore, to you my honoured colleague—to you who direct the sanitary service of our army corps—I say that, if I am not wholly without use in the service alluded to, you may count upon me to undertake, with implicit acquiescence, any duty whatever you may impose upon me—not in the higher sphere to which your kindly appreciation might tempt you to call me, but in any other, however humble. For me, as for many others, the dignity of the post is not to be measured by the nature of the work assigned to it, but by the love of our dear country, which is now claiming only that respect for her rights hitherto denied her by an unscrupulous oppressor."

This characteristic letter was addressed, as long ago as March 10th, to Colonel Bernardi, since deceased, and has been made available for publication by the courtesy of his widow. Time would fail me to quote, and the space at your disposal to publish, the volunteered undertakings of clinical teachers and consultants, inspired by equal patriotism and couched in similar language to that of the celebrated pathologist of Bologna, "the Mother of Universities." One remark, however, may be made, and it is this: that a movement so animated and so organised as that of the "Plebiscite of Italy's Professors" in this crisis of their country's destiny may not indeed command success, but must assuredly deserve it.

THE TOURING CLUB OF FRANCE AND THE WAR.—The approach of what used to be the holiday season prompts the inquiry, What has become of the touring clubs? Foremost among these, by reason of its influence, the number of its members, and the excellent service it has rendered, not least conspicuously in imposing better sanitary conditions in hotels, is the Touring Club of France. When war broke out this club had under its inspection all over Europe hotels at which members were certain of cleanliness, moderate charges, and easy redress for any legitimate grievance on reference to the club. But the war has changed all this, for many of the hotels are now converted into hospitals. So vast an organisation, however, could not remain idle, making no use of the magnificent premises secured by it for its headquarters—viz., the mansion in the Avenue de la Grande Armée once inhabited by the Humbert family, where the safe that was supposed to contain the fabulous fortune of the mythical Crawford family was kept. At this time last year this building was the centre for organising touring and exploring expeditions in all directions. Now the tourists are for the most part fighting at the front, so the Touring Club has been converted into an organisation for contributing to the health and convenience of those in the fighting line.

With the sanction and help of the Minister of War it has created a committee, known as l'Œuvre du Soldat au Front, to help soldiers at the front. Its object is to supply the soldier with necessary things which he does not obtain from the Ordnance Department. The magnificent drawing-rooms of Madame Humbert's mansion are now converted into workshops, and the Touring Club of France has succeeded in turning out no fewer than 2500 parcels a day, each containing from 25 to 30 articles. These comprise things useful in maintaining the cleanliness and the warmth of the soldier, and thus conducing to his health, things which, nevertheless, the war administration does not provide. For instance, there is a watertight hood that protects the back of the neck like a sou'-wester. There are also warm socks, woollen mittens, towels, soap, combs, hair and tooth brushes, grease for the feet, an ampoule of iodine, thread, buttons, safety pins, and a very ingenious over-shoe. This last can be made easily with any little bit of carpet or rug. It slips over the shoe to keep the feet warm while sleeping or standing still in the trenches. Then there is a powder or an ointment that is very successful in keeping away vermin. The other objects are of the nature of comforts, or even luxuries, that bear no direct relation to the question of health preservation, such as mirrors, flint tinder-boxes, candles, tobacco pouches, cigarette papers, postcards, pencils, bootlaces, jam, books, and such like.

The subscriptions paid by tourists who no longer go out touring were obviously insufficient to provide enough parcels of this description, consequently the Touring Club conceived the ingenious idea of organising throughout France the "Day of the 75." Millions of postcards, medals, and little flags were prepared recalling the great service rendered by the famous gun. These little trinkets, none of them the size of half a crown, weighed *en bloc* nearly 20 tons. They were sold for a penny and upwards and brought in no less than 5,200,000 francs. What this means may be judged by the fact that a million francs in silver 50-centime pieces weigh five tons and in 10-centime copper pieces a hundred tons. Special arrangements had to be made with the banks to deal with the huge amount of small coin thus paid for mementoes of the 75 gun. The £208,000 which an army of 50,000 ladies realised by selling 22,000,000 mementoes have greatly helped to increase the comforts for the soldiers. But there is more money yet to come in, for the receipts from the colonies and distant places are not yet to hand, so that the tourists of France have rendered yeoman service for our common cause.

The war has not, however, compelled the Touring Club entirely to neglect the interests of the tourists. The upkeep of roads, which was a part of its business, has proved of great service for military purposes, as well as for the comfort and safety of tourists. Further, the club has begun a campaign to spread the knowledge as to where and how, without traversing the enemy's lines, advantages such as were formerly enjoyed at Homburg, Wiesbaden, Marienbad, Karlsbad, and similar places, can now be obtained. An extensive correspondence also, including many letters from England, consisting of inquiries about the French health resorts, has been conducted. It is quite certain that no English families will go this summer to either German or Austrian baths or spas. With the exception of those situated in the Vosges and the Ardennes, the resorts of France generally are available. The Touring Club urges that this affords an excellent opportunity for setting forth the superiority as regards politeness and attention that France can offer such visitors.

BELGIAN RED CROSS: WAR EXHIBITION, 1915.—A war exhibition to assist the funds of the Belgian Red Cross Anglo-Belgian Committee, of which the Queen of the Belgians is patroness, is announced to be open from June to October at the Prince's Skating Club, Knightsbridge, S.W. A 13,700 sq. ft. mural panoramic representation of Belgium will portray the beauties of Brussels, Antwerp, Bruges, Ghent, Liége, Namur, and the Valley of the Meuse, including Dinant, Louvain, Malines, Ypres, and Visé. The exhibition includes seven sections, forming a comprehensive war exhibition. Section 1: Trophies of war from the more important battle-grounds. Section 2: Armament and ammunition in the making. Section 3: Red Cross work, hospital and nursing. Section 4: Science and industry as applied to war, including the latest scientific instruments used in connexion with war. Section 5: Food and hygiene. Foodstuffs of every description for War Office requirements, for invalids, wounded, and convalescents, also hygienic preparations and apparatus. Section 6: Equipment, showing every equipment necessity of officers and men, nursing equipment for hospital and field service, working exhibits, lectures, and demonstrations. Section 7: Maritime and aerial section, comprising the latest inventions in naval and aerial warfare. Season tickets are being issued at £1 1*s.* each, carrying the privilege of admitting a different friend at each visit. Assistance of every kind will be welcomed by the honorary organising secretary, War Exhibition, London Chamber of Commerce, 97, Cannon-street, London, E.C.

EDINBURGH UNIVERSITY OFFICERS TRAINING CORPS MEDICAL DUTY.—On May 29th the cadets of the medical unit of Edinburgh University Officers Training Corps were inspected by Major Gray, R.A.M.C., at Kingston Grange, where the unit had fitted up a field ambulance. After a careful inspection of the field hospital arrangements and the cadets in various manœuvres, the inspecting officer addressed them, and expressed his satisfaction with what he had seen. Speaking of the value of such a unit, he said some people thought there was no good having the Officers Training Corps during war, but there was no greater possible mistake, as the essential qualification for Royal Army Medical Corps officers, apart from the medical one, was military training. Had there been no such Officers Training Corps, the Army Medical Corps at the outbreak of war would have been in difficulties. Some who had previous training rather grumbled at having to train recruits at home, yet they had done more useful work than going straight out, and they would get their chance now. Students felt that they were being blamed for hanging back and not joining a combatant unit. Nothing was more foolish. Combatant officers could be trained in a few months—for example, at Sandhurst in three—but it took five years to train a Royal Army Medical Corps officer, and should the war last a long period there would be a shortage of doctors. It was their duty to stick to their studies, taking the necessary military training in such a unit as this; ultimately they should join the Royal Army Medical Corps.

WOUNDED ALLIES RELIEF COMMITTEE.—As Dr. R. Fleming Jones, whose appointment we recorded in THE LANCET of May 8th, has been prevented from going to Serbia, the Wounded Allies Relief Committee has appointed instead Colonel Joseph A'Hearne, who has for many years been associated with the Government Medical Service of Queensland.

The committee has also appointed as medical head of its typhus hospital unit (200 beds) about to proceed to Montenegro, Dr. Gerard Carré, formerly medical officer to the Uganda Relief Expedition, and senior medical officer to the Fashoda Expedition. The medical staff will also include Dr. Isabel Ormiston, Dr. C. B. Slater, and Dr. Lillias Hamilton. Miss Elkington is matron and there are 14 nurses and one male nurse attendant. Another matron with five nurses will follow later.

SCOTTISH COMMAND: MEDICAL SERVICES.—Colonel J. D. Mackintosh, Assistant Director of Medical Services 2/1st Lowland Division, in addition to other duties, has been appointed to supervise the administration and organisation of all military, war, and Territorial general hospitals in the Glasgow area. Major H. A. Leebody, from Officer Commanding 2/3rd Lowland Field Ambulance, to be Deputy Assistant Director of Medical Services, Scottish Command, dated March 5th, 1915.

NEW MILITARY HOSPITALS.—The military authorities are taking over for a military hospital the Western District Hospital, Possil-road, Glasgow, which is a modern and well-equipped institution with accommodation for 250.—The Lanarkshire Red Cross Society, through its President, the Duchess of Hamilton, has been authorised by the War Office to take over for a hospital the new school buildings at Gateside, Cambuslang.—The Devonport Workhouse has been taken over by the War Office and will be converted into a military hospital for wounded soldiers. The infirmary, which contains 150 beds, will be used immediately, and in about three weeks it is expected that the workhouse will be fitted up for the accommodation of about 400 additional patients.

RURAL MEDICAL RELIEF IN SERBIA.—Owing to the heavy death-rate from typhus fever among the Serbian medical profession and the absorption of the remainder in military and fever hospitals in towns, the rural population is entirely deprived of medical aid. Mrs. St. Clair Stobart describes in the *Morning Post* of May 25th how in an effort to aid them a hospital tent was planted on the road between Kragujevatz and Belgrade, with a notice in Serbian that medicine and advice would be given gratis to those who attended and brought their own bottles. The success was instantaneous, and over 500 patients are reported as having been treated during the first week, having trudged from their villages even so far as 50 miles away. The authorities have now given permission for a series of these roadside dispensaries, along the main road, administered from the Women's Tent Hospital, to be established, each such unit to consist of a woman doctor, two nurses, an interpreter, a chauffeur, and a handyman. The staff will live in tents and attend to their own sanitation, which will have an educative effect also on the peasantry. The expenses of outfit and three months' maintenance are about £1000 for each unit, and it is desired to start six units as early as possible. Mrs. Stobart says: "From the humane point of view alone it is inconceivable that money could be better spent than upon these brave and patient peasants who are suffering from a foe against whom they have no weapons of defence. Villages are being decimated, whole families blotted out, and horrors unspeakable are being endured by these peasants without complaint, because they take it as their share of the sacrifices which have to be made by the whole nation in the cause of Freedom. But it is a heavy price to pay, and it is impossible to watch it being paid without attempting to lessen even to a small degree the horrible toll of suffering." Donations marked for the Stobart Dispensaries will be gladly received by the treasurer of the Serbian Relief Fund, 55, Berners-street, London, W.

Dr. Fabian Ware and Dr. Oswald Kelly, chief medical officers of mobile units of the British Red Cross serving with the French Army, have been mentioned in French Army orders for conspicuous devotion to duty.

Scottish Women's First Aid Corps.—The annual meeting of the Scottish Women's First Aid Corps was held in the Synod Hall, Edinburgh, on May 28th, Mrs. Maxtone Graham, the corps commandant, presiding. Miss M. E. Macmillan, honorary secretary, read the annual report, which stated that the corps was started six years ago in order to train women to be in readiness to render help to the wounded in the event of war. The scheme was justified, said the report, by the large number of competent trained women who were ready to serve when the war broke out. Since April, 1914, 219 new members had joined, and the corps now numbered 356, and, in addition, about 300 non-members had taken advantage of their classes. A house lent by Mr. Frank Deas in Magdala-place had been equipped and furnished by members of the corps as a special corps hospital. It was now occupied by wounded soldiers, was recognised by the Scottish Command, and received the capitation grant. Mrs. Graham referred to the progress made by the corps during the year, and remarked that their hospital was a kind of visible outcome of what they had been doing. The honour of the corps was in the hands of the members, who must do everything they could to make the hospital a success. They had been getting soldier patients from the City Hospital and from the Deaconess Hospital, and she was sure that so long as they kept the hospital open it would never be empty. They got the capitation grant from the Government, but that was not sufficient to keep the hospital going, and they would require to raise more funds.

Kitchener's Indian Hospital.—Tents to accommodate 500 more beds are being put up to augment the accommodation of this hospital, which was fully described in The Lancet of April 3rd. The staff consists of 37 officers of the Indian Medical Service, mostly from three Indian general hospitals, and some had to give up lucrative appointments to serve in Kitchener's Hospital. There are also 15 Anglo-Indian assistant surgeons, 30 native sub-assistant surgeons, 150 sepoy ward orderlies, 100 native followers, and 75 British orderlies of the R.A.M.C.

Collaboration in Operative Surgery.—A medical correspondent, signing himself "Observer," writes that he was recently an eye-witness of operations at the Royal Military Hospital, Devonport, illustrating the possibility of collaboration in surgical operations. The operations, he says, were for the radical cure of bilateral inguinal herniæ by Bassini's method. Two operators took part, one on either side. The initial incisions were simultaneous. Both operations, though varied in technique, proceeded *pari passu;* and the last skin suture in each was inserted simultaneously to a second. The only point for discussion (that of dressings or no dressings) was harmoniously compromised, and the patient is doing well, the period of anæsthesia and the shock of operation being both reduced by half. Such an illustration speaks highly for surgical collaboration. Here skill met skill, not as "Greek meets Greek," but as allies in a hallowed cause. No small credit, too, is due to the sister who supplied both operators synchronously and speedily with their varied armamentarium.

Alleged Robberies of the Wounded by Medical Orderlies.—There has been not a little direct accusation levelled in various newspapers against medical orderlies of petty thieving practised on the wounded during transport. One very specific instance in the *Times* of May 28th has drawn forth from Colonel P. Broome Giles, of the City of London Branch of the Red Cross Society, a very trenchant and just reply. After referring to the difficulties that lead to defective packing of kits upon ambulances, illustrated by a singular instance, he calls attention to the *primâ facie* unlikelihood of the charge from the general position and character of those engaged in the transport work, and concludes: "If your correspondent will furnish me with (1) the date; (2) the hour; (3) the hospital the officer was taken to, I can verify from the duty roll those she implicates, and will give her every facility to make an exhaustive inquiry, after which she can either publicly substantiate her accusation or apologise." That many articles are lost during transport is highly probable, and it is difficult to conceive how it could be otherwise when all attendant circumstances are taken into consideration, so that it is quite gratuitous to propound as the only explanation a highly improbable system of thieving.

Incorporated Soldiers' and Sailors' Help Society.—This society held its annual meeting on May 26th, when the secretary, Major Tudor Craig, said that over 23,000 beds had been presented to convalescent homes by the members of the society since the war began. The Princess Christian Home at Brookwood was also to be turned into a convalescent home, and the accommodation at the Naval Hospital had been increased to 128 beds. Princess Christian said that the necessary funds had been offered by a friend through the Queen and herself, and she thought that the extension would remain permanently at the hospital. The secretary continued that a fund in memory of Lord Roberts had been instituted to enable the partially disabled to be dealt with. The Cordwainers' Company would give disabled men 42 weeks' training in cobbling, the society making them meanwhile an allowance. The National Fund had helped with a grant of £35,000.

A Military Chamber of Horrors.—The Royal United Service Institution have expressed approval of a suggestion of Dr. Raymond Crawfurd that a "chamber of horrors" should be established in the museum of the institution for the display of a collection of objects testifying to the commission of atrocities in warfare, such as German military proclamations, letters and diaries ordering or recording atrocities, the Botha correspondence on the infection and poisoning of wells, German gas apparatus, incendiary pastilles, and the like. The War Office is considering the matter.

Sir George Newman, principal medical officer of the Board of Education, has been appointed on the Central Control Board (Liquor Traffic) created by the Government to deal with the drink problem in relation to munitions, transport, and camp areas. The address of the Board is 76, Strand, London, W.C.

Medical News.

University of London.—At the third M.B., B.S. Examination for internal and external students, held recently, the following candidates were successful:—

Lilian Annie Clark and *Dora Challis Colebrook (honours), London (Royal Free Hospital) School of Medicine for Women; †Clement Cooke, St. Bartholomew's Hospital (honours); Herbert Davies, University College Hospital; Robert Hood Fleming, B.Sc., Middlesex Hospital; Norah Hamill and Mary Emmeline Joll, London (Royal Free Hospital) School of Medicine for Women; William Edward Kingdon, University College Hospital; Olive Gertrude Mary Langmead, London (Royal Free Hospital) School of Medicine for Women; Stylianos George Papadopoulos, St. Bartholomew's Hospital; George Henry Roberts, St. Thomas's Hospital; Gabriel Francis Rodrigues, University College Hospital; Farid Henein Abdel Sayed, St. Mary's Hospital; Hilda Mary Scarborough, London (Royal Free Hospital) School of Medicine for Women; John Frank Herbert Stallman, Guy's Hospital; and Katharine Ada Waring, London (Royal Free Hospital) School of Medicine for Women.

* Distinguished in Midwifery and Diseases of Women.

† Distinguished in Medicine.

Central Midwives Board.—Special meetings of the Central Midwives Board were held at Caxton House, Westminster, on May 26th and 27th, Sir Francis H. Champneys being in the chair. A number of midwives were struck off the roll, the following charges amongst others having been brought forward: Not being scrupulously clean in every way as required by Rule E.1; that when attending patients the midwife did not take with her the appliances or antiseptics required by Rule E.2, and consequently was unable to comply with the provisions of Rules E.3 and 7; not taking and recording the pulse and temperature of patients as required by Rule E.13; the midwife employing an uncertified person to visit the patient as her substitute in contravention of Section 1 (4) of the Midwives Act, 1902. Neglecting without reasonable cause to attend a patient on the day of the confinement in spite of repeated messages, and not arriving until after the delivery had taken place; that notwithstanding instruction by the inspector of midwives the midwife did not make use of a clinical thermometer, nor did she take the pulse of her patients, and consequently did not comply with Rule E.13.

That in contravention of Section 10 of the Midwives Act, 1902, a midwife practised as a midwife in 1915 without having notified the local supervising authority of her intention to do so. Not always attending patients for a period of ten days following labour, as required by Rule E.11; not keeping a register of cases as required by Rule E.23; when attending patients the midwife did not wear a clean dress of washable material, as required by Rule E.1, and that in cases where the advice of a registered medical practitioner had been sought she neglected to notify the local supervising authority thereof, as required by Rule E. 21 (1).—An application from the examiners of the Manchester Centre asking the Board to arrange for examinations to be held six times a year alternately at Manchester and Liverpool was granted. The Board decided that the Brighton Hospital for Women should be reinstated upon the list of institutions at which pupils may be trained on the annual approval by the Board of their lecturing staff and training midwife. Letters were considered from the medical officer of health of Sheffield and from the county medical officer of health of Lancashire inquiring whether a rupture of the perineum is to be considered "serious" within the meaning of Rule E. 20 (3) in every case where stitching is required. The Board decided that any case of a ruptured perineum which required stitching was a case of "serious rupture" within the meaning of the rule.

THE TYRONE MEDICAL COMMITTEE.—At a meeting of medical men, held in Dungannon, Dr. E. C. Thompson (Omagh), President of Tyrone Medical Committee, in the chair, it was decided to write to those Tyrone doctors who had accepted positions as "half-time certifiers" under the Insurance Act, requesting them to fulfil their pledges to the Tyrone Medical Committee and resign their positions, and stating that, in case of refusal, upon the first occasion on which an offender visited the patient of another medical practitioner an application would be made to his College to have his licence as a practitioner cancelled. It was also decided that the medical officers of the various Poor-law unions should press for four weeks' vacation each year and that the locum-tenents be paid £4 4*s.* per week, and each medical practitioner was requested not to accept less. It having been mentioned that Dr. E. C. Thompson, surgeon to the Tyrone County Infirmary, Omagh, had been removed from the position as medical adviser for co. Tyrone under the Employers' Liability Act, which he had held since 1896, and another doctor appointed, it was decided to ask for an explanation from those in authority why Dr. Thompson without notice or explanation had been removed from the post.

MIDDLESEX HOSPITAL.—Presiding over the quarterly meeting of the Court of Governors of the Middlesex Hospital on May 27th, Sir Henry Morris referred to the valuable results which were expected from the electrocardiograph department of the hospital. The report stated that since the beginning of the war 301 soldiers of the Expeditionary Force had been treated in the hospital, while at the branch institution at Clacton-on-Sea 1432 wounded soldiers had been treated.

THE MONTESSORI SYSTEM. — Speaking at a meeting of the Montessori Society, held at University College on May 22nd, Mr. C. W. Kimmins, D.Sc., Chief Inspector of Education to the London County Council, said that children who had been educated under the Montessori system were about a year in advance of others who had received ordinary methods of instruction. The children were more resourceful and easily overcame the difficulties of unseen work. Dr. Kimmins warned his audience against introducing new methods without adequate preparation.

THE ROYAL SOCIETY.—The meetings of the Royal Society previously announced for June 10th and 24th will not be held.

THE death is announced of Mr. J. P. Martin, L.R.C.P., L.R.C.S. Irel., the medical officer of No. 1 West District, Liverpool. Mr. Martin, who was greatly endeared to the poor of the Great Mersey-street district, where he lived, had a wide circle of friends and was a generous supporter of Liverpool charities.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BAKER, LILY, F.R.C.S. Irel., M.B., Ch.B. Irel., has been appointed a temporary Demonstrator in Obstetrics and recognised Teacher in Ophthalmology, Laryngology, and Otology at the Bristol University.

BARNES, HELEN PATRICIA, M.B., B.S. Lond., has been appointed Resident Obstetric Officer and Ophthalmic House Surgeon at the Bristol Royal Infirmary.

BEVERS, E. C., M.B., B.Ch. Oxon., F.R.C.S. Eng. & Edin., has been appointed Surgeon to the Radcliffe Infirmary and County Hospital, Oxford.

BIGGART, A. S. L., M.B., Ch.B. Edin., has been appointed Medical Officer to the Hartlepools Sanitary Authority.

CHITTY, HUBERT, M.B., M.S. Lond., F.R.C.S. Eng., L.R.C.P. Lond., has been reappointed Assistant Curator of the Pathological Museum, Bristol University.

CROSSE, REGINALD EDWARD, M.R.C.S., L.R.C.P. Lond., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 47, to be attached more particularly to the Greenwich and Woolwich County Courts.

FORTESCUE-BRICKDALE, J. M., M.D., Ch.B. Oxon, has been reappointed Director of the Public Health Laboratory at the Bristol University.

JAMIESON, THOMAS MITCHELL, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Western District by the Plymouth Board of Guardians.

JONES, W. BLACK, M.D., B.S. Lond., D.P.H., has been appointed Medical Officer of Health for the Combined Rural Districts of Builth and Colwyn and for the Urban District of Builth; also Medical Officer and Public Vaccinator for the Lower District of the Builth Union.

MOORE, J. P., M.B., B.S. R.U.I., has been appointed Medical Officer of the Camolin Dispensary District of the Gorey Union.

MORRIS, LEONARD N., M.B., B.Ch. Bristol, has been reappointed Assistant Curator of the Pathological Museum. Bristol University.

NIXON, JOHN A., M.B., B.C. Cantab., F.R.C.P. Lond., has been reappointed Deputy Dean of the Faculty of Medicine at Bristol University.

PEDLOW, T. B., M.B., B.S. R.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Lurgan District of the county of Armagh.

RYAN, PERCEVAL CECIL HARDINGE, M.D., B.Ch. Dub., has been appointed Deputy Medical Officer for the Fourth District of the Chipping Sodbury (Gloucestershire) Union.

SAYEED, A. L., M.B., Ch.B. Edin., has been appointed Assistant Medical Officer at the St. Mary's Infirmary, Highgate-hill, N.

SHED, A. B., M.B., Ch.B. Edin., D.P.H. St. And., has been appointed Assistant County Medical Officer to the Hants County Council.

SKEEN, JAMES H., M.B., C.M. Aberd., has been appointed Medical Superintendent of Fife and Kinross Asylum at Springfield.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

BARNSLEY COUNTY BOROUGH.—Assistant Tuberculosis Officer and Resident Medical Officer at Mount Vernon Sanatorium. Salary £300 per annum, with board and residence.

BATH, WINSLEY SANATORIUM FOR CONSUMPTION.—Assistant Resident Medical Officer. Salary £150 per annum, with board, residence, and laundry.

BETHNAL GREEN INFIRMARY, Waterloo-road, N.E.—Assistant Medical Officer. Salary at rate of £280 per annum, with apartments, board, and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Female Senior and Junior House Surgeons. Salary £180 and £150 per annum respectively, with board and laundry.

BIRMINGHAM CORPORATION CITY HOSPITAL, Lodge-road.—Temporary Female Assistant Resident Medical Officer. Salary £250 per annum, with board, residence, and washing.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £250 per annum, with apartments, attendance, &c.

BIRMINGHAM, ROMSLEY HILL SANATORIUM FOR CONSUMPTIVES.—Assistant Resident Medical Officer, unmarried. Salary £250 per annum, with board, apartments, and laundry.

BOLTON INFIRMARY AND DISPENSARY.—Third House Surgeon. Salary £170 per annum, with apartments, board, and attendance.

BRADFORD EDUCATION COMMITTEE.—Assistant School Dentist. Salary £300 per annum.

BRISTOL, BISHOP'S KNOLL HOSPITAL (2ND SOUTHERN GENERAL HOSPITAL), Stoke Bishop.—Surgeon in Residence. Salary £250 per annum, with board, lodging, and laundry.

BRISTOL GENERAL HOSPITAL.—House Surgeon and Second House Physician, both for six months. Salary at rate of £150 per annum, with board, residence, &c.

BRISTOL ROYAL INFIRMARY.—Throat, Nose, and Ear House Surgeon for six months. Salary at rate of £120 per annum, with board, apartments, and laundry.

BURY INFIRMARY.—Senior and Junior House Surgeons. Salary £175 and £150 per annum respectively, with board, residence, and washing.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

Cambridge, Addenbrooke's Hospital.—Honorary Assistant Surgeon for Ear, Nose, and Throat Department. Also Honorary Assistant Surgeon for Ophthalmic Department.

Canterbury Mental Hospital.—Locum Tenent Assistant Medical Officer for six weeks. Salary £6 6s. per week, with board, lodging, washing, and attendance.

Carlisle Non-Provident Dispensary.—Resident Medical Officer. Salary £200 per annum, with apartments (not board).

City of London Lying-in Hospital, City-road, E.C.—Resident Medical Officer. Salary £5 5s. per week, with board, lodging, and washing.

Coventry and Warwickshire Hospital.—House Surgeon. Salary [illegible] arranged.

Darlington County Borough Insurance Committee.—Two Medical Practitioners.

Edinburgh, Royal Army Medical Corps Depôt, Easter-road Barracks.—3rd Lowland Field Ambulance: Commissions.

Evelina Hospital for Sick Children, Southwark, S.E.—House Physician for five months. Salary at rate of £75 per annum, with board, residence, and washing.

Folkestone, Royal Victoria Hospital.—House Surgeon. Salary as agreed, with board, residence, and laundry.

General Lying-in Hospital, York-road, S.E.—Resident Medical Officer for three months. Salary £50 per annum, with board.

Glasgow, Anderson College of Medicine, Dumbarton-road.—Chair of Anatomy.

Hampstead General and North-West London Hospital.—Resident Medical Officer for six months. Salary at rate of £200 per annum, with board, residence, and laundry.

Hospital for Consumption and Diseases of the Chest, Brompton.—House Physician for six months. Salary 30 guineas. Also Assistant Resident Medical Officer. Salary £100 per annum, with board and residence.

Macclesfield General Infirmary.—Resident Medical Officer. Salary £150 per annum, with board and residence.

Manchester Corporation, Baguley Sanatorium.—Superintendent. Salary £400 per annum, with house, coal, light, and washing.

Manchester County Asylum, Prestwich.—Locum Tenens. Salary 6 guineas per week.

Manchester Hospital for Consumption and Diseases of the Throat and Chest, Bowdon, Cheshire.—Resident Medical Officer for In-patient Department. Salary £100 per annum, with board, apartments, washing, &c.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Metropolitan Ear, Nose, and Throat Hospital, Fitzroy-square, W.—House Surgeon. Salary £150 per annum. Also Honorary Anæsthetist.

Middlesex Hospital, W.—Officer-in-Charge of Electrocardiograph Department. Salary £50 per annum.

Montenegro.—Assistant Doctor for Unit of 200 beds. Salary according to experience, and expenses.

Northampton County Borough.—Temporary Clinical Tuberculosis Officer. Salary £350 per annum.

Northumberland County.—Assistant School Medical Inspector. Salary £300 per annum.

Northumberland County Council.—Temporary Clinical Tuberculosis Medical Officer. Salary 7 guineas a week.

Nottingham Children's Hospital.—Female House Surgeon. Salary at rate of £150 per annum, with apartments, board, and washing.

Nottingham General Hospital.—Senior House Physician and Assistant House Physician. Salary at rate of £300 and £250 per annum respectively, with board, residence, and laundry.

Plymouth, South Devon and East Cornwall Hospital.—House Surgeon. Salary as arranged, with board, residence, and washing.

Portsmouth Corporation Mental Hospital.—Assistant Medical Officer. Salary £250 per annum, with board, apartments, attendance, and washing.

Portsmouth Royal Hospital.—House Surgeon for six months Salary £150 per annum, with board, &c.

St. Mary's Hospital for Women and Children, Plaistow, E.—Assistant Resident Medical Officer. Salary at rate £90 per annum, with board, residence, and laundry.

Salisbury General Infirmary.—House Surgeon and Assistant House Surgeon, unmarried. Salary £150 and £100 per annum respectively, with apartments, board, lodging, and washing.

Sheffield, Jessop Hospital for Women (Gynæcological and Maternity Departments).—Female Junior House Surgeon, unmarried. Salary £80 per annum, with board, residence, and laundry.

Sheffield Royal Infirmary.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.

Sheffield, Wharncliffe War Hospital, Middlewood-road.—Resident Medical Officers.

Singapore, Straits Settlements.—Resident Medical Superintendent for Infectious Diseases Hospital. Salary 4200 dollars for first, 4500 dollars for second, and 4800 dollars for third year, with free quarters.

Southampton, Parish Infirmary, Shirley Warren.—Resident Assistant Medical Officer. Salary £250 per annum, with apartments, rations, washing, and attendance.

Southwark Union Infirmary, East Dulwich-grove, S.E—Assistant Medical Superintendent. Salary at rate of £250 per annum, with board, apartments, and washing.

Stockport Infirmary.—Senior House Surgeon. Salary £200 per annum, with board, washing, and residence.

Swansea General and Eye Hospital.—House Physician. Salary £125 per annum, with board, apartments, and washing.

Tingwall, Whiteness, and Weisdale Parish.—Medical Officer and Public Vaccinator. Salary £45 per annum.

Tunbridge Wells General Hospital.—House Surgeon, Liberal salary, with board, residence, &c.

Ventnor, Royal National Hospital for Consumption and Diseases of the Chest, Isle of Wight.—Assistant Resident Medical Officer.

Wakefield County Borough Insurance Committee.—Two Medical Practitioners.

Walsall and District Hospital.—Assistant House Surgeon and Anæsthetist. Salary £150 per annum, with board, residence, and laundry.

West Bromwich and District Hospital.—House Surgeon and Assistant House Surgeon, unmarried. Salary £150 and £120 per annum respectively, with residence, board, and laundry.

Western General Dispensary, Marylebone-road, N.W.—Honorary Ophthalmic Surgeon.

West Ham and Eastern General Hospital.—Resident Medical Officer. Salary £160 per annum. Also House Physicians. Salary £120 and £100 per annum, with board, residence, and washing.

Wigan, Royal Albert Edward Infirmary and Dispensary.—Junior House Surgeon. Salary £150 per annum, with board, apartments, and washing.

Willesden Isolation Hospital.—Temporary Resident Medical Officer. Salary £6 6s. per week, with board and lodging.

Wolverhampton and Staffordshire General Hospital.—Resident Medical Officer and House Surgeon for six months. Salary at rate of £150 per annum, with board, rooms, and laundry.

Worcester General Infirmary.—Resident Medical Officer. Salary £150 per annum, with board, residence, and washing.

Wrexham Infirmary.—Resident House Surgeon. Salary £125 per annum, with board, lodging, and washing.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Leigh, in the county of Lancaster; and at Alford, in the county of Lincoln.

Births, Marriages, and Deaths.

BIRTHS.

Black.—On May 29th, at Tullymore Park, Newcastle, Co. Down, the wife of Major Barclay Black, R.A.M.C., of a daughter.

Clarke.—On May 26th, at Prince's-gate, the wife of Lieutenant K. B. Clarke, R.A.M.C., of a daughter.

Ginner.—On May 4th, at Southport, to Dr. and Mrs. Wightman Ginner, of Cannes and Contrexéville, a daughter.

Travers.—On May 30th, at Phillimore-gardens, W., the wife of Ernest Travers, M.D. Lond., of a son.

Wright.—On May 26th, at Nithsdale House, Boston, Lincs., the wife of W. E. Merle Wright, F.R.C.S. Edin., of a daughter.

MARRIAGES.

Fisher—Stenhouse.—On June 1st, at St. Giles's Cathedral, Edinburgh, Edward F. Fisher, M.B., F.R.C.S., Surgeon, Royal Navy, to Nancy, elder daughter of Mr. and Mrs. Stenhouse.

Orlebar—Borrer.—On June 1st, at the Chapel Royal, Savoy, Jeffery Alexander Amherst Orlebar, Lieutenant, R.A.M.C., to Margaret Frances Hamlyn, only daughter of William Borrer, of Pakyns Manor, Sussex.

Ross-Daniel.—On May 25th, at Portishead Parish Church, Andrew T. Ross, M.D., F.R.C.S., Lieutenant, R.A.M.C., to Kathleen, youngest daughter of Major J. F. R. Daniel, V.D., of Fircliff, Portishead.

DEATHS.

Guinness.—On May 25th, at Mount Hermon, Sydenham Hill, H. Grattan Guinness, M.D., aged 53 years.

Hay.—On May 26th, at Edinburgh, Surgeon-General George William Robertson Hay, I.M.S. (retired).

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

BOOKS, ETC., RECEIVED.

Arnold, Edward, London.
A Manual of Gynæcology for Students and Practitioners. By Samuel J. Cameron, Assistant to Regius Professor of Midwifery, University of Glasgow. Price 18s. net.

British Optical Association, Clifford's Inn, London, E C.
British Optical Association Year Book. By J. H. Sutcliffe, F.B.O.A. Price 5s.

Churchill, J. and A., London.
Principles of Human Physiology. By Ernest H. Starling, M.D. Lond., F.R C.P., F.R.S , Jodrell Professor of Physiology in University College. Second edition. Price 21s. net.

Milford, Humphrey, London, New York, Melbourne, and Bombay.
Heredity and Environment in the Development of Man. By Prof. Edwin Grant Conklin (Princetown University). Norman W. Harris Lectures, 1914. Price 8s. 6d. net.
A Hausa Phrase Book, with Medical and Scientific Vocabularies. By Allan C. Parsons, W.A.M.S. Price 7s. 6d. net.

Panini Office, Allahabad.
The Dietetic Treatment of Diabetes. By B. D. Basu, Major I.M.S., retired. Fifth edition, revised and enlarged. Price Rs.1.8.

Pharmaceutical Press, London.
Pharmaceutical Pocket Book for Practitioners and Students. Edited by J. Humphrey, Ph.C., F.J.I. Fifth edition. Price 1s. 6d. net.

Putnam's, G. P., Sons, London and New York.
Field Hospital and Flying Column. Being the Journal of an English Nursing Sister in Belgium and Russia. By Violetta Thurstan. Price 2s. 6d. net.
In Hoc Vince: The Story of the Red Cross Flag. By Florence Barclay.

Rider, William and Son, London.
Nerve Control: The Cure of Nervousness and Stage-fright. By H. Ernest Hunt. Price 1s. net.

Watts and Co., London.
Morale, Fondée sur les Lois de la Nature. By M. Deshumbert.

Notes, Short Comments, and Answers to Correspondents.

MEDICAL FEES, ETC., IN THE SIXTEENTH AND SEVENTEENTH CENTURIES.

AMONGST the historical documents belonging to the Duke of Rutland preserved at Belvoir Castle are a number of household account books of various dates ranging from the year 1522 to the year 1700. These are of much interest as illustrating the stately housekeeping of a wealthy noble family in the sixteenth and seventeenth centuries. The accounts throw light on local and family history, social customs, the manner of living, food, drink, the history of prices, trade, amusements, costume, and innumerable other subjects. Entries of payments for tobacco and pipes, the price of the former sometimes running very high, show how esteemed the custom of smoking was among the nobility. The accounts also indicate that in 1670 tea was regarded as a necessary part of the Earl of Rutland's equipment for a journey in England. On May 6th of that year, for instance, we find a charge of 8*d.* "for a box of tin to keepe his Lordshipp tea in coole for his journey," and on Nov. 20th of the same year there is the entry, "for ½ a pound of tea for his Lordshipp, 10*s.*" Subjoined are a few examples of payments recorded to physicians and apothecaries and other items of expenditure of direct or remote medical interest:—

1528.—Payde, be my Lorde's comaundement, to Doctor Freman, fysicion, xl*s.*

1530.—Item, to Doctor Freman, fusician, x*s.*—To Doctor Freman, fusician, for his paynes with my Lorde Ros, xx*s.* Item, to Doctor Bartlott, by my Lorde's commaundement, vij*s.* vj*d.*—Item, to Peerson the poticary for divers restoretyffes, vij*s.* iiij*d.*

1532.—Item, geven in rewarde to the myddewif and norys at the christenynge of Master Hervie's childe, xx*s.*

1533.—Item in reward, the xij day of *Julii*, to Roger Smyth, poticarye, for his payne takyn with my Lord in his fevir, vij*li.* xiij*s.* iiij*d.*; to him for such stuff as he spent abowt my Lord in the tyme of his sekenesse, xxxij*s.* x*d.*—Item in reward at the same tyme to Doctor Bartlet, xxx*s.*—Item in reward to Doctor Freman the same tyme, xiij*s.* iiij*d.*—Item to a woman phicisian at Bingeham in the Vale, iij*s.* vj*d.*—Item to Roger Smyth, poticary, for my doughter Anne, iij*s.* iiij*d.*

1536.—Item to Doctor Clement for lokyng to my Lorde Roos when he was seke at Endfyld, xxx*s.*—Item to the same doctor at another tyme at Yorke Place, x*s.*

1537.—Item in reward to Master John the poticary for ij glasses of oyle of almons and for a medicen for my Lorde's childern for the wormes at ij tymes, x*s.* x*d.*

1540.—Paide in reward to Doctor Bill commyng to my Lorde at Halywel, xx*s.*—Item payd to Doctor Edwardes for his reward, beyng with my Lord Roos at Croxton in his sekeness, and for his costes goyng to Cambrige for ix days at vj*s.* viij*d.* the day, iij*li.*

1541.—Item, the xxvijth day of February, to Mr. Leveret, the phesicion, for that he came to my Lady then and tarried at Belvoier iij days, x*s.*—Item, gyven in rewarde to Mr. Edwardes, phisicion, of Newarke, for his comyng to se Maistres Margaret Paston when she was seke, v*s.*—Item, gyven in reward to Mr. Leverett for mynystryng medecyns to my Lord Roose when he was seke, x*s.*; and for the like mynystryng to Maistres Margaret Paston in her sekenes, xxii*s.* vj*d.*—Item, payd for a pynte of aquawyte, xij*d.*

1542.—Gevyn to Doctor Augustyne at dyverse tymes (over and beside iiij*li.* x*s.* in the price of a gowne of damask) lxxv*s.*—Gevyn to Doctor Buttes, xxij*s.* vj*d.*—Gevyn to Doctor Nicholas at dyverse tymes, viij*li.* x*s.* x*d.* Gevyn to Doctor Crome at dyverse tymes (over and beside xj yardes of damask for a gowne, price iiij*li.* x*s.*), lxxvij*s.* xj*d.*—Gevyn to Docter Bill at ij tymes, xl*s.*—Gevyn to Mr. Oliff, the Kinge's surgian, at diverse tymes (over and beside xj yardes of damask for a gowne, price iiij*li.* ij*s.* vj*d.*) vij*li.* xiiij*s.* vj*d.*—Paid by Anthony Digby for ypocras when my Lorde was syke, vj*s.* viij*d.*

1543. (Account of the executors of the will of Thomas, Earl of Rutland re funeral expenses, &c.)—For the charges of the stufe that was occupied about the searing of the corps, and to the surgion for his penes, as apperithe by Thomas Disney's booke, xiij*s.*; to the plummer for puttying the corps in lead, iiij*s.* iiij*d.*; to Docter Wendy for his paynes takyng about the seid Erle in his siknes and after, contyneyeng there by the space of ij days, vj*li.* iij*s.* x*d.*

1551.—Item to Doctour Wotton for his counsaile in phisik to my Lord, x*s.*—Item to Goldring the potecary for marmalad and other thinges, x*s.*

1554.—Item to Docter Hyll, xx*s.*—Item to Docter Wooton, the same daie, x*s.*—Item to Holland the surgion, the same daie, iij*s.* iiij*d.*

1555.—Item in reward to John Rolpotey, my Lord's surgoin, by his commaund, xl*s.*—Item, by my Lorde's commaund, to the straunger that ys his surgion, x*s.*

1558.—Item to Doctor Peter and Doctor Hil at iij several times for their coming to my Lady, xxvj*s.* viij*d.*

1559.—Item paid for cariage of Bukston's water sent to my Lord of Penbrok, iiij*s.* iiij*d.*

1590.—Item geven at the christenyng of Mr. Bassete's daughter, to mydwief and nurse, xx*s.*

1594.—Paid to Mr. Docter Hunton and Mr. Harrye Webster for commynge to Belvoyre to her Ladyship, xxx*s.* —Paid to George Sandwith, barber, for commynge to Belvoyre ij severall tymes to tryme his Lordship, v*s.*

1598.—Item for two bezer stones, vj*li.*

1599.—Item geven to Doctour Marbeck for the waters and phesicall thinges sent towardes Ireland, and for his paynes in providing them, x*li.*—Item geven to Mr. Goodrous, her Majeste's sergeant chirurgian, whom she sent to my Lord, v*li.*—Item geven to Mr. Thorne, chirurgian, vj*li.* xiij*s.* iiij*d.*—Item to Mr. Doctour Marbeck for his half yeares anuytie due at Our Lady Day, iij*li.* vj*s.* viij*d.* Item paied to the apothecary for phisick for Capten Whitlock, xxvj*s.*; and geven to Doctour Marbeck for his paynes about the Capten in his sicknes, by his Lordship's commandment, v*li.*

1600.—Item in rewarde to Doctour Marbeck for certen waters and other thinges which he bought and provided for my Lordes use in his jorney into Holland, and for his paynes, x*li.*

1604.—Paid to Mr. Docter Hunton in rewarde commyng to my Lady iij*li.*, and to John Lucas his potticarie, xl*s.*—Paid to Mr. Docter Mumforde for commyng from London to mynister phissicke to mye Ladye, xv*li.*

1605.—Item, to Mr. Perk for letting his Lordship's blood, xxx*s.*

1606.—Item, to Sir Walter Raleighe's man that brought a water for my Lord for the collicque, xx*s.*; for half an oz. of muske to make plaister, xxx*s.*; a pounde of tobacco sent to Belvoyre, xl*s.*: tobacco pipes, v*s.*

1607.—Given to Mr. Rigesley, of Newarke, phisision, being sent for to come to Henry Lynforde, by my Lord his comaundiment, xxx*s.*—Given to Mr. Alton, of Nottingham, phisision, as in rewarde for attending of my Lady and mistris at Belvoer, v*li.*

1609.—Item paied to Mr. Doctour Percywalle, apothecary, for viij oz. of elixar of saltt, iij*li.* iiij*s.*; water distilled, a quart, vj*s.*; pylles, ij*s.* vj*d.*

1611.—Item, for a plaster for the gowte from Mr. Cranmer for my Lord, x*s.*

1612.—Item to Mr. Frederick and Mr. Guillian, chirurgians, for their attendance upon my Lord [Roger, Earl of Rutland] at Cambridge from the tyme of Mr. Guillian's comyng to Cambridge and for the incision made, j*li.*, and for embalmyng the corps, xx*li.*

1614.—Paid Fredrick, the surgeon, for imbalming the corps of Sir Olliver Manners, 30*li.*—Delyvered to Mr. Waters, of Stamffoord, when hee was sent for to my Lord Roasse, beeinge not well, iij*li.*—Paied the same daie unto John Hilton, his pothecarie's man, for apothecarie stuffe, viij*s.* iiij*d.*—Delyverd to Mr. Docter Ridgley, of Newark, for ten daies beeinge at Belvoire with my Lorde Roose, x*li.*

1615.—To Docter Ridgley, for beeing at Garradon with my Lorde Roosse when he was not well, payd to him for vj daies, in goulde, vj*li.* xij*s.*

1618.—Paid to Docter Anthony for a dram of the essenc of gold, 6*li.*

1640, August 11th.—Item paid to Sir Daniell Delyne for two gree stones, whose virtue is good to cure the stone in the bladder or kydneyes, for which I [Earl of Rutland] have payd 3*li.* 5*s.* and am to have a twelv moneths tryall, and yf I do not like them I shall have 40*s.* for them againe.

1652.—Paid to my honourable Ladye's hands for Docter Preedian, at twise, for his care of Lord Roose, 50*li.*—Paid Mr. Turnor that pretends to cure my Lord, 9*li.* 5*s.*

1667.—Paid Mr. Price, Doctor Bacon's apothecary's bill for Lord Roos, 4*li.* 5*s.*

1679.—Paid to Docter Harwood when hee came to my Lord, 12 dayes, 12*li.*; given to his man that came with him, 5*s.*—Paid to Docter Deakcon for 3 dayes attending my Lord [John, eighth Earl of Rutland, died Sept. 29th, 1679], 3*li.*; paid to Docter Harwood for 10 dayes attending my Lord, 10*li.*; paid to Docter Atton for 10 dayes attending my Lord, 10*li.*—Paid to Mr. Wodard and Mr. Wood, apoptecary, as apears by his bill, for embalming my Lord, and fisyeck, 38*li.*

A NURSE'S EXPERIENCES.

THE *St. Mary's Hospital Gazette* for May contains a very interesting and instructive account of the German conduct towards British Red Cross nurses and doctors in Belgium, which deserves a wide circulation, for it should act as a strong incentive to recruiting among men of manliness and chivalry. Nurse Hilda Speak, after briefly describing the operations of the English ambulances in Brussels, tells how for a month after the coming of the Germans to the city they attended on English wounded prisoners there :—

"One day a German officer ordered all there to be locked up in a waiting-room, saying that they were acting as spies. They were thoroughly searched and kept there for thirty-six hours, until the American Consul interfered. A few days after an order was issued to the effect that all the English nurses and doctors were to go out of Brussels or they would be taken as spies. As there was no possible chance of our getting out of Brussels without help, the Germans were asked to find some means of seeing us away. After considering for some days we were told to be ready to leave on October 6th. ......At last we got into the train. In each compartment there were German soldiers. There were three other nurses in my compartment and two soldiers of the roughest and most objectionable type. They smoked and ate continuously until we reached Cologne, and would insist on having the windows closed. The carriages were the worst I have ever seen—hard wood seats and backs and very, very dirty. There were also soldiers riding on the top of the carriage. It took twenty-eight hours to reach Cologne; in ordinary times it takes four hours. The train crawled, and we seemed to stop every few minutes. During the journey through Belgian territory we noticed the awful devastation all along the line, many towns and villages containing only a roofless lot of ruins. Louvain appeared to be practically wiped out. Imagination can never picture the terrible ruin done to Belgium. At Stolberg, a small station just before Cologne, we were very roughly told to get out of the train. There I saw a young German officer take two of our doctors by the shoulder and throw them across the platform. At this point I was more alarmed than I had been since entering Brussels. Our luggage was all turned out on the platform and the soldiers searched it. All knives and forks were taken, surgical instruments, and even a nurse's fountain pen. After looking through our papers and a great deal of consultation, we were told to get into the train again by the soldiers, and we started for Cologne. I think if some of our young men in England had witnessed the treatment of the British Red Cross at this station it would help them to make up their minds as to where their duty to their country lies. There were twenty doctors; they could not retaliate, their only thought and care being for the hundred and twenty-four nurses who were in their charge in the country of the enemy. At Cologne we got our first meal, and were treated quite reasonably. ...... We still had a guard with us, and arrived at Münster at 7 A.M. on Oct. 8th, where we were evidently expected, and given breakfast at the station. It appeared to be a camp station: there were a great many soldiers round about. They gave us basins of coffee, sausage and bread. We washed our hands and faces under a pump, and felt much better for the food and wash. After an hour's wait we entered the train again. ...... We continued the journey, and that night had no light in the carriages. We arrived at Hamburg at 1 A.M. on Oct. 9th, but were not well treated there. We left the train for ten minutes, guarded by soldiers each side to a refreshment room, but we were waited on very badly, the food being practically thrown at us. ...... After travelling four days and three nights we arrived on the Danish frontier, and there we stopped for the German guard to leave the train. No one except those who have experienced it can imagine our feelings as we left the Germans behind and knew we were prisoners no longer. Then our destination was Copenhagen, where we were kindly received by the British Consul there. The people were exceedingly kind to us."

A significant sidelight upon the estimate by outsiders of the moral issues of the war is given by Miss Speak in the following grimly dour verse addressed "To the British Surgeons and Nurses Passing Copenhagen on Their Way from Belgium," which in English greeted them from the columns of a Danish newspaper on their arrival in Denmark :—

Silent we bid you welcome,
In silence you answered our greeting—
Because our lips must be closed
And your teeth set against the gale.
Our mouths are mute,
Our minds are open—
We shall greet you farewell in silence.
Sowers of good-will
On fields where hate is sown,
Fare ye well!

LEFT-HANDED SOLDIERS.

AN inquest has been held in London on a left-handed soldier who committed suicide, and there seems to have been a feeling that his left-handedness may have had considerable influence in depressing the man, for in reply to the question put to an officer in the man's battalion as to whether his left-handedness would make him awkward, the officer replied, "We have several who are like that, but we train them in time, and we also teach them to shoot from the left shoulder." Among the reasons assigned for left-handedness (excluding traumatic origin) have been heredity, left or right breast-feeding or carrying, mimicry of other children, functional nervous disease, and idiopathic epilepsy. Other reasons have been suggested, but the etiology is uncertain. The rate of percentage of left-handedness in this country is usually accepted as between 2 and 5 per cent. Among 17,000 school children examined in Berlin 5·15 per cent. of the boys and 2·98 per cent. of the girls were found to be left-handed. Left-handed Hebrews appear to have possessed as a rule more than ordinary skill in warfare, for in one army of 26,700 men, of the "chosen men" of the army, 700 were left-handed, and the context suggests that these were all the inhabitants of one town—Gibeah. Moreover, "every one could sling stones at an hair breadth and not miss" (Judges xx. 16).

WHAT IS A CONSULTANT?

To the Editor of THE LANCET.

SIR,—I am grateful to Dr. A. Charpentier for his letter in your issue of May 22nd. A consultant is sent for to, say, the Langham Hotel by an urgent message. Remembering it may be a case of life and death, would he go? He goes, and finds a case of acute tonsillitis, the patient having just arrived from Yorkshire. The sick man says to the doctor: "I wish you to attend me until I am well, and I will, of course, pay you £3 3*s*. a visit." What is the duty of the consultant?

I am, Sir, yours faithfully,
ENQUIRER.

May 25th, 1915,

ICE.

THE hot weather will doubtless cause an increased demand for ice, especially for the wounded. It has long been a reproach to this country that the only man known usually to keep ice in hot weather is the fishmonger, whose sanitary environment is not always of the highest standard. The initial cost of an ice-safe is prohibitive to many, but practically its cost is soon saved in the value of food preserved and utilised which would otherwise have been lost. It has also been suggested that the milkman might carry ice for sale on his rounds. Ice production is a huge industry in the United States. The American Ice Company with the Knickerbocker Ice Company claim to be the largest manufacturers of ice in the world, and in 1911 there were 2004 ice manufacturing establishments in the United States with a capital of 118 million dollars. Their products were valued at 43 million dollars in 1909, as against 24 million dollars in 1904, and the number of employees was 19,041. This did not include the ice manufactured in breweries, meat, provision, and cold storage warehouses, and other industries that produce it for their own use. If in America ice is used too indiscriminately, in this country its use is too much neglected, and there is room for expansion on the right lines.

THE HOUSE-FLY.

Dr. A. Mearns Fraser, the medical officer of health of Portsmouth, has issued for his health authority a useful two-page leaflet explaining the dangers caused by the house-fly and how these dangers may be prevented. In the last paragraph Dr. Fraser says: "It has been stated that in a certain lunatic asylum one of the tests applied to find out if a patient is sufficiently recovered to be discharged, is to give him a broom and put him in a room with a water-tap turned full on. If he proceeds placidly to sweep up the water without turning off the tap, his standard of intelligence is not deemed to be high enough. The individual who endeavours to get rid of the fly danger by killing individual flies, and at the same time allows their breeding places to remain unheeded is intellectually not far removed."

Mr. J. H. E. Winston, Wills librarian, Guy's Hospital, continues the interesting and useful series of "Bibliographies of Guy's Men," with Nos. 4, 5, and 6, containing the bibliographies of the published writings respectively of Sir H. G. Howse (1869–1904), Dr. P. H. Pye-Smith (1866–1910), and Mr. Thomas Bryant (1856–1902). The preceding bibliographies, some of which have been noticed in our columns, are those of Sir Samuel Wilks, Mr. James Henry Targett, and Sir W. Arbuthnot Lane.

J. M. A.—According to "The Modern Materia Medica," published by the *Druggists' Circular*, New York, "Echafolta" is an eclectic preparation of the plant *Echinacea angustifolia*, intended as an internal antiseptic and alterative. Dr. J. Coplin Stinson has written as follows, in the *New York Medical Journal*, concerning the plant: "Echinacea ...... is a mildly stimulating non-toxic, antiseptic, an antizymotic, alterative, anodyne, restorative, and aphrodisiac. It has been used internally in malarial disease, typhoid and other fevers, syphilis, diseases of the stomach, diphtheria, septic poisoning, anæmia, erysipelas, cancer, snake and other bites, and impotence; locally, in diseases of the teeth, gums, and throat, wounds, ulcers, sloughing, snake and other bites, hæmorrhoids, cancer, boils, carbuncles, urethritis, elytritis, different forms of erythema, erysipelas, and impotence." The remainder of the article is devoted to extolling its aphrodisiac virtues as a local application.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

SOUTH-WEST LONDON MEDICAL SOCIETY, Bolingbroke Hospital, Wandsworth Common, S.W.

WEDNESDAY—9 P.M, Bolingbroke Lecture:—Sir W. Arbuthnot Lane.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patients (Mr. E. Gillespie). 2.30 P.M., Medical Out-patients (Dr. T. R. Whipham); Gynæcological Out-patients (Dr. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Surgical Operations (Mr. Carson). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. Howell Evans); Nose, Throat, and Ear Out-patients (Mr. H. D. Gillies). Radiography (Dr. Metcalfe). 3.30 P.M., Medical In-patients (Dr. A. J. Whiting). 4.30 P.M., Special Lecture:—Mr. T. H. C. Benians: Pathological Data in Cerebro-spinal Fever and their Bearing on Diagnosis, Prognosis, and Treatment.

WEDNESDAY.—Clinics:—2.30 P.M., Throat Operations (Mr. Gillies). Children Out-patients (Dr. T. R. Whipham); Eye Out-patients (Mr. R. P. Brooks); Skin Out-patients. 5.30 P.M., Eye Operations (Mr. R. P. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patients (Dr. A. J. Whiting); Surgical Out-patients (Mr. Carson); Radiography (Dr. Metcalfe). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

FRIDAY.—2.30 P.M., Surgical Operations (Mr. Howell Evans). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. E. Gillespie); Eye Out-patients (Mr. R. P. Brooks).

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M. Clinical Lecture.

ROYAL SANITARY INSTITUTE, Civil Court, Guildhall, Bristol.

FRIDAY.—11 A.M., Provincial Sessional Meeting. Discussion on the Co-ordination of Military and Civil Sanitary Services in War time (opened by Lieut.-Col. D. S. Davies, R.A.M.C.(T.F.), and Mr. L. S. Mackenzie. The following are expected to take part in the discussion:—Mr. W. Harpur, Dr. W. G. Savage, Dr. W. H. Symons, Mr. J. Tubb-Thomas, and Mr. C. Wintle. 2.30 P.M., By motor-charabanc to Saltford to inspect the Bath New Sewage Works, and to Twerton to inspect the Pumping Station (conducted by Mr. W. H. Radford).

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

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(Taken daily at 9.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 2nd, 1915.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
May 27	30·110	N.E.	...	114	64	49	50	56	Fine
,, 28	30·080	N.E.	...	94	60	48	45	50	Cloudy
,, 29	29·804	S.W.	...	105	55	47	48	53	Cloudy
,, 30	29·920	N.E.	...	109	64	42	44	49	Cloudy
,, 31	30·174	N.E.	...	110	63	42	46	52	Fine
June 1	30·080	S.W.	...	89	64	48	49	54	Fine
,, 2	30·070	N.E.	...	106	72	50	53	59	Fine

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Hunterian Lecture

ON

SOME CONGENITAL LESIONS OF THE SMALL INTESTINE.

THEIR ORIGIN AND CLINICAL BEARINGS.

Delivered before the Royal College of Surgeons of England on March 10th, 1915,

By J. HOWELL EVANS, M.A., M.B.,
M.Ch. Oxon., F.R.C.S. Eng.,
HUNTERIAN PROFESSOR; SURGEON TO THE PRINCE OF WALES'S GENERAL HOSPITAL, TOTTENHAM, N., ETC.

Mr. President and Gentlemen,—Malformation is the term applied to any disturbance of the anatomical structure of the body which originates during intra-uterine life. From very early times such deviations from the normal have been studied. Teratology is no new science. Accurate observations by Caspar and Friederich Woolf, later endorsed and promulgated by Meckel, revolutionised the accepted significance of anomalies and malformations; many deviations in higher types may be regarded as the normal condition of lower forms. Nevertheless, antenatal pathology is to the majority of medical men an unknown land; to the student of embryology no more fascinating subject could be presented than the field of congenital lesions of the small intestine. To me antenatal pathology has been a subject of ever-deepening interest, because it is a subject of tremendous importance for the future of the race and the individual.

Antenatal pathology, being concerned with all the morbid processes which act upon the organism before birth and with the effects which they produce, may be considered from three points: 1. Fœtal pathology. 2. Embryonic pathology, teratology. There is good reason to believe that morbid agencies acting on the embryo produce not diseases but malformations. When the malformed embryo becomes a fœtus it carries its malformation with it. 3. Germinal pathology. The lines along which the future growth is to take place are nearly all fixed during the embryonic period—i.e., the first six weeks of intra-uterine life. Since the chief physiology of the embryo is organogenesis, or formation of parts and organs, so the chief effect of pathological processes in this embryonic or formative period is the malformation of its parts and organs.

Constrictions, Occlusions, and Kinks.

Several hypotheses have been put forward in explanation of atresiæ and stenoses of the small intestine—viz., (1) Intra-uterine peritonitis; (2) ulceration, ulcerative contraction; (3) pressure from tumours; (4) pressure from amniotic bands; (5) embolism or thrombosis of the superior mesenteric vessels; (6) inguinal hernia, volvulus, intussusception; (7) traction of the omphalomesenteric duct; (8) enlarged valvulæ conniventes; and (9) non-liquefaction and non-disappearance of the epithelium-occlusion and ingrowth of the mesenchyme.

One reason why the majority of these hypotheses give the impression that they are mere suppositions is probably to be found in the clinical factor which has played so great a part in the discussion of the etiology of congenital intestinal atresia, and which is found to-day overpowering the surgery of intestinal bands and kinks. It is inconceivable how peritonitis can give rise to formations of the anatomical structure as shown in these occlusions, &c. It is the distinguishing characteristic of all these malformations that the parts of the intestinal wall in relation with the peritoneum are unchanged, and that only the innermost layer is the seat of a pathological process.

During the nineteenth century another hypothesis, in which fœtal volvulus is considered to be the common etiological cause, appeared extensively in the literature of the subject. As in clinical matters innumerable the effect has been taken for the cause, so that any associated volvulus should be looked upon as secondary to the atresia and not the cause of it. Such a causation as fœtal intussusception, suggested by Chiari and advocated by Braun, presupposes intra-uterine mechanical occurrences different from those known to occur in extra-uterine life. Vascular irregularities of the intestine or vascular lesions arising from infections or intoxications, transmitted *via* the placenta, which have been favourably viewed as causes, are hardly likely to produce localised epithelial defects.

Credit is due to Bland-Sutton for drawing attention to the occurrence of malformations at the seat of "embryological events." This view offers a feasible explanation of "perivaterian diverticula" and of ileal constrictions or even occlusions within the zone of Meckel's diverticulum due to super-involution of the omphalomesenteric duct, but not of those malformations close to the ileo-cæcal valve nor of multiple stenoses, nor yet of stenoses situated high up in the intestine.

The first to study the etiology of congenital atresia of the small intestine was Meckel; his views approach more closely to those now accepted than all the hypotheses of the past hundred years. Meckel introduced a normal theory of evolution as the basis of teratology, showing that several malformations are due to the arrested development of early embryonic stages; and he pronounced in principle the important law promulgated in later years by Haeckel as the "principle of biogenesis."

It is a curious fact that nearly one hundred years had elapsed before fresh researchers sought to take up the path so enthusiastically finger-posted by Meckel in order to solve the question of the etiology of congenital atresia of the intestine, and this is all the more astonishing when we consider how unscientific and inferior to Meckel's standard the hypotheses have been which have since prevailed. Few pathologists have worked at the etiology of atresiæ and kinks as falling within the evolutionary theory, and no one had filled up a gap in our knowledge of the development of the intestine until the further investigation and application by Forssner of the discovery made by Tandler.

The earliest stages only became the subject of exact investigation when Tandler commenced his work on the earliest development of the duodenum in 1900. Tandler's hypothesis, which has a totally different basis from any of the aforementioned views, may now be considered.

The Epithelium-Occlusion Theory.

Having found that a temporary epithelium-occlusion completely obliterating the lumen is a normal occurrence in the duodenum Tandler concluded that sometimes this embryonic atresia may persist and be found as a congenital occlusion or stenosis. In 1907 Forssner found that in early embryos the lumen of the duodenum was completely obliterated in places. This normal epithelium-occlusion of the duodenum disappears by a process

No. 4789.

of disintegration, leading to a condition which presents the appearance of vacuolation as seen in Gruyère cheese. Forssner's opinion is that this epithelium-occlusion may take place throughout the small intestine. Further, when followed by an ingrowth of mesenchyme this will account for duplications, for single or multiple occlusions in those segments of the small intestine which enter neither into the duodenum nor the segment of Meckel. The lumen of the duodenum is finally formed by the fusion of the vacuoles, which were discovered and described independently by Kiebel and by Lewis and Thyng. Further, Tandler considered the cause of the occlusion was due to the resistance exerted upon the expanding epithelium by the surrounding mesenchyme.

The actual frequency of any internal congenital lesion cannot be computed at present because of the want of that "systematic examination of the still-born" which has been advocated by Bland-Sutton.

The embryonic epithelium-occlusion develops into a complete atresia by the mesenchyme growing into this epithelium before its disintegration has commenced, thereby making the simple epithelial septum a more permanent structure. The iris-like membrane may well originate in a similar manner because the connective tissue is incomplete or so weak that at one spot it yields to the pressure of accumulated material in the proximal segment; crescentic membranes may have a similar origin. By subsequent changes a thick obstruction may be attenuated so as to form a membrane or a stenosis may be converted into a valve.

[*By a series of diagrams it was shown how the various primary types of atresia may be brought about after the mesenchyme ingrowth has taken place.*]

EMBRYONIC FACTORS IN REGARD TO THE SMALL INTESTINE.

As we are considering lesions of embryonic origin it would be well, if time permitted, to detail the chronology of embryonic factors in connexion with the small intestine. Certain points, however, cannot be omitted.

The blastodermic vesicle, having been formed, is divided into two secondary cavities: (1) Intra-embryonic, the future intestinal canal; and (2) extra-embryonic, the umbilical vesicle. At first these cavities communicate by a wide gap which is converted into a short canal of small calibre—the vitelline duct. With the growth of the allantois the umbilical vesicle, owing to its diminished function, atrophies and becomes a mere vestige, whereas its attachment, broad at first, becomes reduced to a slender stalk. Such are the conditions present at the end of the first month. A little later the future umbilical cord consists of: (1) The amnion, which forms a covering containing (2) the vitelline group—(*a*) umbilical vesicle, (*b*) vitelline duct, and (*c*) omphalomesenteric vessels; and (3) the allantoic group—(*a*) allantoic pedicle, and (*b*) umbilical vessels. It is between the third and sixth week of intra-uterine life that the vitelline vesicle attains its greatest size. From the fourth month there ordinarily remains no trace of the primary communication between the intestinal canal and the vitelline sac.

A portion of the intestine normally projects like a hernia into the umbilical cord. As the liver grows and crowds upon the rapidly elongating intestine the intestine must escape, and the cœlomic space within the cord receives this "hernia funiculi umbilicalis physiologica." In this umbilical hernia, according to Mall, there are six primary coils which are as definite in the adult intestine as the convolutions are in the brain. It will probably be found that many of the kinks of the adult intestine are originally associated with these primary coils.

MECKEL'S DIVERTICULUM.

The diverticulum ilei, better known as the diverticulum of Meckel, is always single, having its situation upon the ileum, within a metre or so of the ileo-cæcal valve. In structure it corresponds to the ileum. Its calibre is generally equal to, occasionally smaller, but rarely larger than the calibre of the intestine above its point of origin. Though the diverticulum is usually found along the free border of the ileum, lateral and intramesenteric variations occur. The blood-supply is conducted along a special mesentery or mesodiverticulum ending in a small mass of fat or rarely in accessory pancreatic tissue. The implantation upon the ileum may be at a right angle or at an acute angle. Its shape may be cylindrical, conical, or rarely branched, whereas in length it varies from a nipple-like projection of less than an inch to eight inches or even more.

VESTIGIAL REMAINS OF THE VITELLINE DUCT OR OF ITS VASCULAR BUNDLE.

To J. F. Meckel of immortal fame belongs the credit of having recognised that the "diverticulum ilei" and its rarer congenital umbilical fistula are the remains of the embryonic omphalomesenteric duct, and that the bands which pass from the diverticulum or diverticular zone to the umbilicus are the persistent—patent or occluded—omphalomesenteric vessels. Dareste believed that if a sufficiently careful examination were made some slight trace of these vessels would always be found in the form of small filaments.

In animals, like the cat, which are born with a membrane over their eyes, these filaments are commonly found and are associated with the normal narrowing which occurs near the cæcum. Traces of these vessels are most frequently found in the pig, in which animal there is a corresponding greater frequency in the occurrence of the diverticulum of Meckel. Sometimes a considerable part of the persistent omphalomesenteric artery is found coursing beyond the gut and its diverticulum to the umbilicus. In 1883, it is of interest to note, Allen pointed out that remnants of both the omphalomesenteric artery and vein are normally found in the new-born of the cat, dog, and guinea-pig, in a strand of tissue which generally reaches the navel; these filaments or bands are always covered by peritoneum. Much has been written about the various bands and their inflammatory origin, but no inflammatory band is accompanied by vessels of congenital origin, neither is such a band found to be associated with a definite mesodiverticulum. (See Fig. 1.)

Apart from the interest arising out of the evolutionary point there is the immense practical importance attached to these bands because they are found in children otherwise normal and well-fitted to live and propagate, yet these malformations or anomalies may threaten or even destroy life by secondary occurrences.

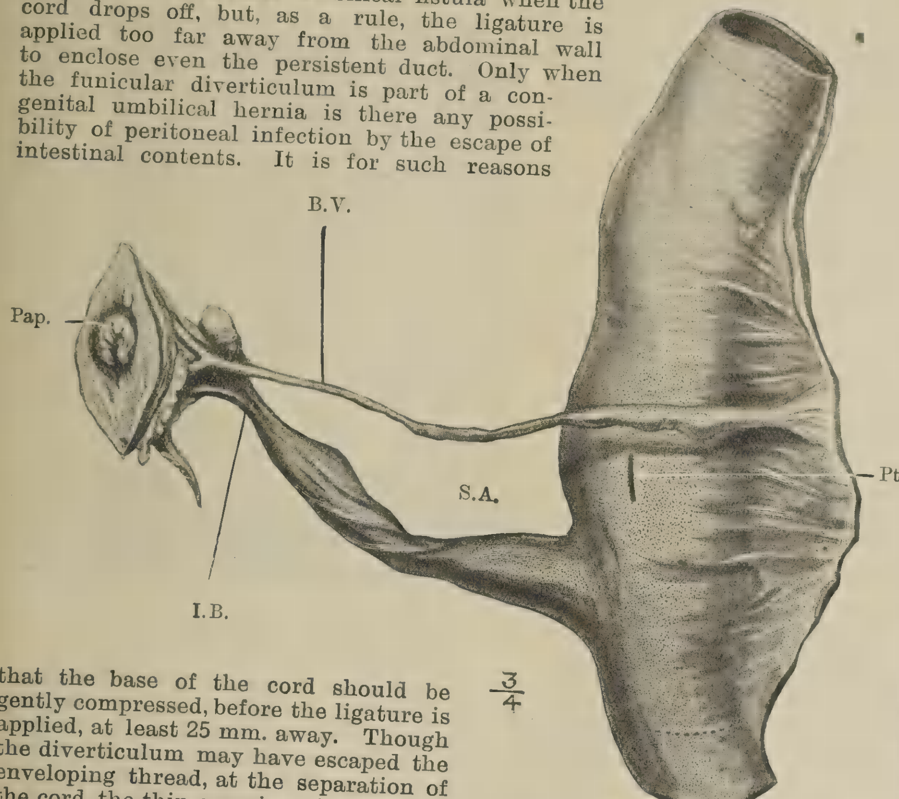
FISTULÆ OF PERSISTENT OMPHALOMESENTERIC DUCT.

Varieties of fistulæ of the persistent omphalomesenteric duct may be distinguished—namely, Series 1, simple cases; Series 2, cases with inversion and prolapse of the mucous membrane;

Series 3, cases of hernia accompanying inversion and prolapse of the mucous membrane; and Series 4, cases of fistula which have caused symptoms of strangulation.

If the omphalomesenteric canal is not obliterated, but continues to develop in its independent manner, it gradually takes on the more complete structure of the small intestine with which it genetically agrees; when the development of this duct attains its maximum it even penetrates into the umbilical cord. It can therefore occur that the ligature of the accoucheur enveloping the persistent duct within the cord may divide the duct with a resulting entero-diverticular umbilical fistula when the cord drops off, but, as a rule, the ligature is applied too far away from the abdominal wall to enclose even the persistent duct. Only when the funicular diverticulum is part of a congenital umbilical hernia is there any possibility of peritoneal infection by the escape of intestinal contents. It is for such reasons that the base of the cord should be gently compressed, before the ligature is applied, at least 25 mm. away. Though the diverticulum may have escaped the enveloping thread, at the separation of the cord the thin covering of the diverticulum will yield under the influence of the least straining or crying of the child.

FIG. 1.



Meckel's diverticulum fixed at umbilicus. The dotted lines indicate the strangulated gangrenous portion. Pap., Papilloma at the navel; the urachus is seen below. B.V., Band; vestigial remains of omphalomesenteric vessels. I.B., Impervious band of attachment. S.A., Strangulating arch. Pt., Point of puncture.

Occasionally small round papillomata, like raspberries, are seen in the umbilical pit; by an imprudent use of the knife, scissors, or caustic the small opening, probably invisible to the naked eye, becomes widened and the undoubted fistulous track is established.

Inversion and prolapse of the diverticular mucous membrane can occur spontaneously directly after the separation of the cord or at a later period, in which case the determining cause is not infrequently a violent attack of coughing, when there unexpectedly appears a tumour of varying size and shape with a fine opening, from which ooze a little mucus and intestinal matters. The umbilical projection behaves like the intussuscepted portion of an intestinal intussusception. When the diverticulum is short and wide, under the influence of increased pressure produced within the abdominal cavity, the juxta-diverticular loop of intestine is projected as through the opening of an artificial anus. It even occurs as a double evagination, the point of separation of the superior and inferior ends presenting itself as a spur between the two loops. The projected intestine becomes œdematous, whereas the contiguous serous surfaces become adherent, so that reduction to remove the impending complete intestinal obstruction is difficult.

DIVERTICULA.

The term "intestinal diverticulum" may be applied to any lateral evagination of the digestive tract. Since the researches of Meckel the name "true diverticulum" is applied to such as result from an embryonic evolutionary disorder; we shall need to differentiate this from another pathological production, the "false diverticulum."

True diverticula are characterised by their constant situation in (*a*) the duodenum and (*b*) the lower portion of the ileum. They consist anatomically of the three regular coats of the intestine with vessels which run in a mesentery. The duodenum is the seat of many developmental irregularities, such as transverse septa and longitudinal folds; it is likewise the situation where several important "embryological events" are crowded together. The embryology of the liver and pancreas demands close study—e.g., the manner in which the primary hepatic diverticulum or median cul-de-sac of the entodermal tube extends as a winged crescentic mass, throwing out extensions and early exhibiting a rounded subdivision (the future gall-bladder and cystic duct), whereas in the angle between it and the duodenum the ventral pancreas has already appeared. Simultaneously or possibly earlier the dorsal pancreas arises at a superior level. Even a paired ventral pancreas has been found in many vertebrates and reported in the human embryo; the presence of a pancreas in the duodenal wall—a cyst and consequent pouch —may be due to this double occurrence. In the duodenal loop congenital diverticula, invariably single, are occasionally found, and the presence of pancreatic tissue in their walls points forcibly to their origin as connected with the dorsal or ventral pancreatic rudiments. It seems well proven that diverticula of the second and third parts of the duodenum are congenital in origin, whereas in the first part three varieties of diverticula occur: (1) congenital; (2) acquired wide-mouth diverticulum of the duodenal vestibule; and (3) ulcer diverticulum.

In the jejunum no "embryological events" complicate the simple tubular structure. Accordingly the majority of jejunal diverticula are false or acquired diverticula. Nevertheless, as the epithelial lining precedes the development of the mesenchyme, so an embryonic irregularity of the epithelium may lead to a protrusion which never becomes covered by muscle tissue and consequently, by a progressive increase in size concomitant with the growth of the individual, this finally attains to a considerable size, when it is wrongly labelled "acquired." Observations applicable to the jejunum are likewise applicable to the ileum, in connexion with which the wider subject of Meckel's diverticulum will be considered.

CONDITIONS DUE TO PERSISTENT OMPHALOMESENTERIC DUCT.

Of all the conditions which arise from the persistence of the omphalomesenteric duct or vascular bundle the most frequent is undoubtedly intestinal obstruction. This complication, which is one of the gravest, has long been known. Internal strangulation associated with a diverticular fistula has for its causation bands or loops to which I shall presently make further reference.

Intussusception of Meckel's diverticulum, when the diverticulum is fixed and patent at the umbilicus, is very rare. Nevertheless, even an instance of a retrograde diverticular intussusception—i.e., in which the distal end of the intestine became invaginated—has been placed on record. Also the diverticulum when free becomes inverted and, acting as a polypus, causes an intussusception, or the invagination of the intestine is produced in the proximity of a diverticulum without its walls being turned in.

Volvulus of the diverticulum of Meckel belongs to the category of curious pathological and rare occurrences. There are only four cases in literature, to which may be added the case now illustrated by means of the epidiascope.

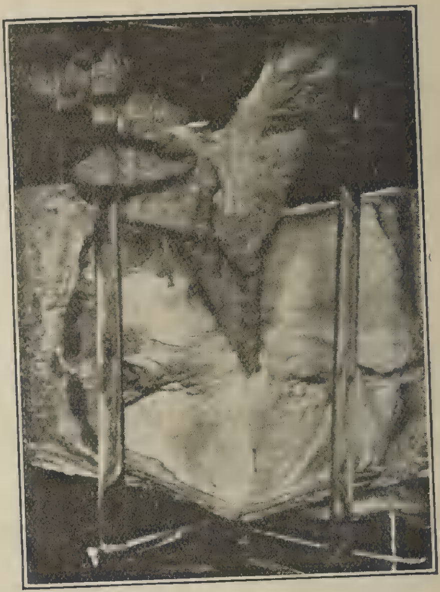
Hernia of the diverticulum of Meckel may be found at birth: firstly, as the only content of the hernial sac—in this exceptional occurrence its interest, as previously stated, is in connexion with the entero-umbilical fistula which may arise therefrom; or, secondly, associated with other portions of the intestine, when we have a matter of omphalocele—only observed after death or where life is impossible, and accordingly of no practical importance. The occurrence, later in life, of a hernia containing a diverticulum of Meckel is more frequent and of greater practical interest. The diverticulum when free is essentially mobile, and, being connected with the lower part of the ileum, is liable to become herniated. In 1700 and 1701 Littré and Méry communicated to the Academy of Sciences cases of diverticular hernia, which have since been denominated "hernia of Littré," and are most frequently met with in the hernial regions of the right side, though found from time to time in inguinal, scrotal, or femoral herniæ of the left side.

DIVERTICULAR STRANGULATION.

The diverticulum, being an integral part of the small intestine, is subject to the same affections, such as enteritis, ulceration, perforation, abscess, and peritonitis; but the particular condition is obstruction by a diverticular knot, by congenital or inflammatory bands leading to a compression. Diverticular strangulations therefore fall into two large classes: (1) When the diverticulum is fixed; and (2) when the diverticulum is free.

The diverticulum may be fixed to the mesentery, to the small intestine, to the cæcum and vermiform appendix, possibly to other viscera or the abdominal wall, but the immediate consideration deals with the diverticulum congenitally attached to the umbilicus directly or indirectly by bands which contain the vestigial remains of the omphalomesenteric vascular bundle. The production of strangulation may depend upon progressive constriction, upon a diverticular ring engaging one or more intestinal loops and acting like a true hernial orifice, upon a diverticular band attached to the umbilicus, or upon free filamentous prolongations. A twist is produced towards the middle of the cord and forms a ring in the most relaxed part, a loop of intestine becomes engaged in the opening, and the collar now stretched will straighten out again and embrace it more tightly. At other times the intestinal loop will entwine itself around the diverticular filament by a twisting movement on its own axis.

FIG. 2.



A view of the peritoneal surface of the anterior abdominal wall showing a diverticulum of Meckel herniated at the umbilicus. (Specimen in Musée Dupuytren, Paris.)

Strangulation by Diverticular Knots.

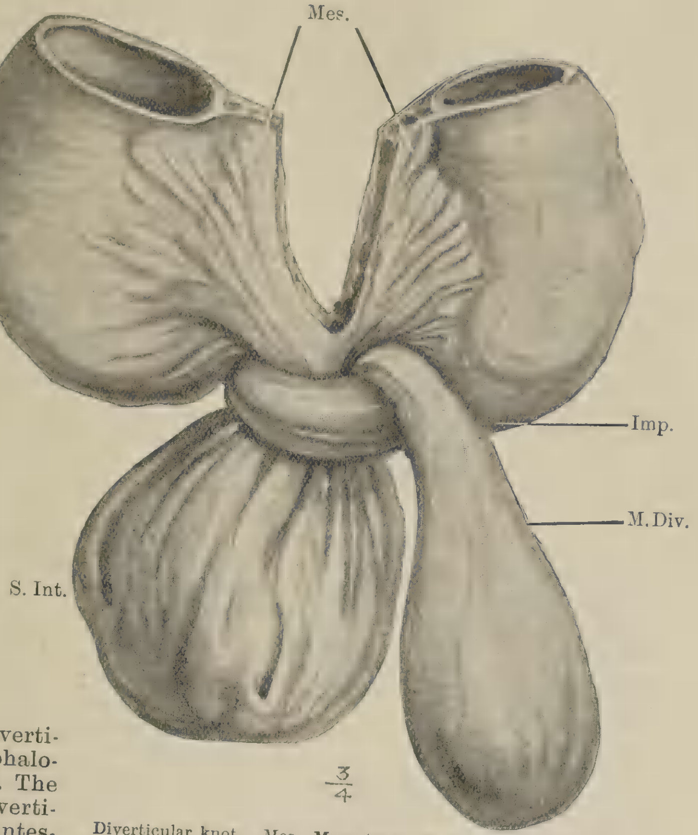
Two conditions need to be considered in connexion with strangulation by knots when the diverticulum is free in the abdominal cavity: (1) The diverticulum remains free up to the occurrence of strangulation; and (2) the diverticulum contracts secondary adhesions to neighbouring organs. To become a cause of strangulation it is necessary that the diverticulum be of such a length as to allow it to encircle the intestine and find its distal extremity snared between its point of origin and the strangulated loop, while its free end must be sufficiently dilated not to slip readily from the grip which has been made upon it.

Occlusion by diverticular knots constitutes one of the most remarkable phenomena in abdominal pathology. Parise's (1851) description of two varieties of diverticular knots has become classical: (*a*) The knot with a single loop; and (*b*) the knot with a double loop.

As to (*a*), the diverticulum grasps the loop immediately above or below, turns around its pedicle, passes below its own point of origin, placing itself between this and the intestine from which it arises, and lastly becomes dilated into an ampulla. (See Fig. 3.) Treves among others considers the terminal ampulla secondary, but its primary occurrence has been proven, and to Parise this is the indispensable requirement to hinder the slipping of the knot, so that the loop can only be disengaged by puncture of the diverticular ampulla.

In (*b*), the second variety of diverticular knot, two loops are found to be taken into its embrace—the one immediately above, and the other immediately below the origin of the diverticulum. Of these two loops one is indispensable, presenting the characteristics of the loop comprised in the simple diverticular knot, and is analogous to that of the simple knot called by Parise the "nodal loop." The presence of the secondary or accessory loop is understood by appreciating that the diverticulum had executed a complete rotation upon its axis before gripping the nodal loop. This Parise called the "rotatory loop."

FIG. 3.



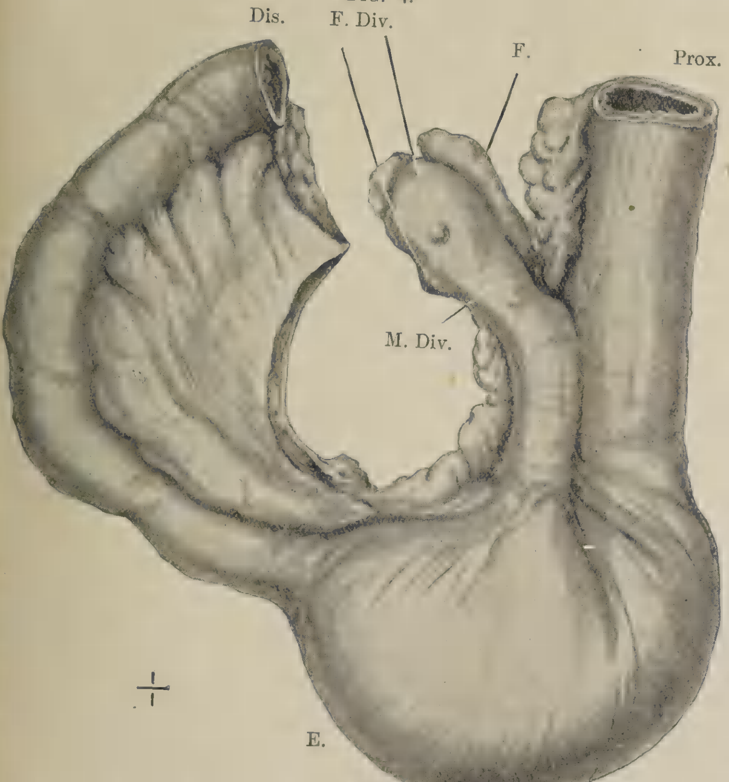
Diverticular knot. Mes., Mesentery. Imp., Implantation of Meckel's diverticulum. M. Div., Meckel's diverticulum with ampullary dilatation. S. Int., Strangulated intestine.

DIVERTICULITIS.

Diverticulitis or inflammation of Meckel's diverticulum—the post-embryonic remains of the omphalo-mesenteric duct—ought no longer to be ignored. The structures which enter into the wall of the diverticulum being identical with those of the small intestine and its evagination comparable to the appendix vermiformis, any analogy, becomes admissible, if established between the pathology peculiar to these two appendices—appendix ilei, appendix cæci.

The frequent occurrence, at the distal end of a true diverticulum, of false diverticula (see Fig. 4) whose walls are incomplete explains the ease with which a perforation may be produced and the rapid extension to the peritoneum of a diverticular infection. Similar anatomical dispositions, an analogous structure and a direct communication with the intestinal tract allow of inflammation in the appendix ilei in the same way as in the appendix cæci. Concretions or foreign bodies may provoke congestion of the mucous membrane and even produce erosion or obstruct the intestinal ostium; these may all in their turn be adjuvants, but the sole determining cause of diverticulitis is *infection*. The clinical features from the transformation of the diverticulum into a closed cavity in which is produced a focus of infection, with subsequent septic intoxication, or from the invasion of the diverticular wall proceeding to not only a peridiverticulitis but even to a widespread peritonitis, are comparable to those of an appendicular infection. The widely open ileal ostium, even if it renders a closed cavity more difficult, allows of the free access of parasites

FIG. 4.



Specimen illustrating extensive stenosis. F. Div., False diverticula. F, Fat. Prox., Proximal end of intestine with hypertrophied wall. Dis., Distal end of intestine with narrow lumen. M. Div., Meckel's diverticulum. E, Enterocyst.

and foreign bodies which play a certain part in the etiology of diverticulitis. The various pathological affections—e.g., tubercle and typhoid—which attack the ileum can extend to the diverticulum. The part played by mechanical circulatory troubles which are so often observed must not be neglected.

Diverticulitis presents no distinguishing clinical characteristic to guide the surgeon. As diverticulitis is little known, and as the phenomena it provokes are produced by other lesions, there is no wonder that the condition is invariably taken for other lesions until operation reveals or necropsy evidences the true condition. "As many cases of diverticulitis as come before us, so many errors of diagnosis made" is a remark which stigmatises our very imperfect ability to unerring diagnosis of intra-abdominal lesions.

[*A series of diagrams, drawings, and specimens were shown illustrating the chief points in connexion with the production of diverticulitis, peridiverticular abscess, diverticular pyo-stercoral fistulæ, &c.*]

Cysts of Vitelline Origin.

Cysts which are of vitelline origin may be classified according to their situation: (1) Intramesenteric or retroperitoneal; (2) diverticular, (*a*) enterocyst of Gfeller, (*b*) enterocyst of Roth, and (*c*) enterocyst of free diverticulum; (3) umbilical, (*a*) retroparietal or properitoneal, (*b*) intraparietal or intramuscular, and (*c*) proparietal or subcutaneous; (4) funicular; and (5) terminal.

Beyond the hernial sac in the new-born, and yet within the dependent portion of the umbilical cord, small cysts have been found containing viscid fluid and proved to be distended unobliterated vitelline portions, to these I have applied the name of "funicular cysts." If a systematic examination of the cord and placenta of all still-born was instituted I doubt not but that many a funicular cyst as well as many a terminal cyst—i.e., of the remains of the yolk sac—would be revealed.

Umbilical cysts of vitelline origin comprise those varieties which are in close relation with the anterior abdominal wall. These cysts are very rare; not more than ten instances which have been authentically proven as having a definite vitelline origin have been recorded. These cysts represent the persistence of the distal portion of the omphalomesenteric duct with any filament or band which may connect its posterior wall to the small intestine or mesentery. The open cysts, in all probability, result from the necrosis of the extreme end of the diverticular remains.

In connexion with enterocystomata it is very interesting to observe that in birds after the yolk-sac has been drawn into the body-cavity its stalk remains in connexion with the intestine, forming an appendix like a small cæcum. This often persists throughout life in the Nidifugæ, and occasionally as in the Ratitæ retains some degenerated yolk but does not remain in communication with the ileum. In the Nidicolæ or Altrices it is generally absorbed before maturity. Though in the newly hatched chick the yolk-sac should atrophy completely it may form a cyst of considerable size, as is well illustrated by a specimen from an emu—in the Museum of this College—in which the pedicle is twisted. Some free diverticula show evidence of a progressive constriction which may ultimately lead to a retention cyst, but this variety is more liable to become the seat of a diverticulitis, as is also the case when the intestinal orifice is almost closed by a circular valve of reduplicated mucous membrane.

Intramesenteric cysts—cysts the origin of which is correctly ascribed to the vitelline duct—may be found attached to the intestine, to the distal border of the mesentery, or lying within the mesentery. The cyst wall includes all the usual layers of the intestinal wall. Little had been mentioned about the vitelline origin of these cysts until Dowel in 1900 reviewed the subject. Terrier and Lecène have collected 18 instances of juxta-intestinal cysts, which they regard as derived from the remains of the omphalomesenteric duct. Some intramesenteric cysts may be the outcome of other diverticula of the small intestine. Again, cysts in the mesentery may have originated behind the peritoneum and migrating forward between the layers of the mesentery come into contact with the intestine.

ON THE BACTERIAL FLORA OF WOUNDS PRODUCED DURING THE PRESENT WAR.[1]

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It is merely our intention in this communication to refer to the bacterial flora of wounds of various kinds produced during the present war. We have selected some hundred cases from our series of observations on superficial and deep injuries of the bones and soft parts produced by shell, shrapnel, and bullets. It is improbable that a selection of a larger number of cases would prove of greater value, as the bacterial flora falls into two important groups which are fully represented here. We merely recite these results with the hope that they may serve to emphasise the importance of certain bacteria in the varieties of infected wounds which surgeons and others in charge of such cases have to deal with. We have avoided any reference to treatment, as this is a question which is very much under discussion and largely depends on the bacteria which are present in the infected tissues.

We may mention at the outset that as the work was done in this country we have no records which actually refer to the type of bacteria found *directly* after injury. It would seem most probable, however, that the bacteriology of a recent wound is merely the bacteriology of manure implanted in damaged tissues. The fact which appears to be of greatest interest is the close similarity of the bacterial flora of these wounds to the infection of the tissues such as occurs among civilians in any large hospital. There is the closest similarity between the bacteriology of severe injuries of the soft parts produced by shrapnel and injuries in civil life infected with horse-dung.

In severe traumatism met with in this way there is usually infection of the damaged tissues with the B. aerogenes capsulatus, streptococci, and coliform bacilli. If the patient dies from a rapid infection it is generally caused by the gas gangrene bacillus; if he survives streptococci often take chief command of the infection. This is the bacteriological history of many of these shrapnel wounds. It has appeared to us from previous experience of gas gangrene that the mere presence of the B. aerogenes capsulatus is not the important factor in a wound, but it is the presence of this organism in tissues which are under considerable increase of tension that is of such extreme importance, and experience gained during this investigation tends to confirm this view. Our cases have been selected so as to afford examples of the varieties of injuries, and to compare the bacteriological findings of the comparatively slight superficial lesions with the deep and severe wounds of bone and soft parts. The most important group of bacteria from many aspects is the anaerobic family, among which the bacillus of tetanus and the B. aerogenes capsulatus are the most important members.

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[1] The clinical material was derived from St. Thomas's Hospital, the 2nd London General Hospital, and from private sources. A grant has been made from the National Research Committee towards the expenses of the investigation on wound infection.

It is the relation of these anaerobic bacteria to the diseases to which they give rise that is of greatest importance to the surgeon. It is for that reason that we have considered separately the survival of the anaerobic group of bacteria in the tissues to which we shall refer in some detail. No account will be given of the technique employed, but in every instance a complete detailed examination was made. It will suffice to emphasise the value of the liquid egg and veal medium of Besredka, for it is impossible to over-estimate the advantages this medium offers both for the cultivation of the aerobes and anaerobes; in fact, without it we should have failed on many occasions to detect the anaerobic bacteria in the infected tissues.

Pathogenic Anaerobes.

No.	Length of history.	Other bacteria present.	Anaerobe.
1	3 days.	B. coli.	B. tetani.
2	14 "	Staph. albus.	"
3	9 "	B. coli; Diphtheroid bacillus.	"
4	13 "	Staphylococcus; Unclassified bacillus.	"
5	11 "	Streptococcus; B. coli; Staphylococcus; Diphtheroid bacillus.	"
6	49 "	B. coli.	"
7	7 "	"	"
8	65 "	B. proteus.	"
9	6 "	Streptococcus; Staph. aureus.	B. tetani and B. aerogenes capsulatus.
10	28 "	Streptococcus; Staphylococcus; Unclassified bacillus.	"
11	11 "	Staph. aureus; Diphtheroid bacillus.	"
12	2 "	None.	B. aerogenes capsulatus.
13	5 "	Staph. aureus; B. proteus.	"
14	8 "	Staph. albus; Unclassified bacillus.	"
15	9 "	Staph. albus.	"
16	11 "	Staphylococcus.	"
17	22 "	Staph. aureus.	"
18	6 "	Staph. albus.	"
19	5 "	B. coli.	"
20	26 "	Streptococcus; Staphylococcus; Diphtheroid bacillus.	"
21	14 "	Staph. aureus; Unclassified bacillus.	"

Wounds in which pathogenic anaerobes were found.—Twenty-one wounds in all yielded cultures either of B. tetani or of B. aerogenes capsulatus, or of both. The majority of these wounds entailed considerable damage to the tissues, but they were of all varieties, ranging from a trivial skin-wound to a severe and extensive compound fracture of a long bone—in fact, there was no special feature of clinical interest to suggest the importance of the bacteriological findings.

The table shows that with a single exception every wound was infected with aerobic bacteria in association with the anaerobes. The exceptional case was that of a superficial shrapnel wound in the neighbourhood of the knee-joint; the joint cavity was infected, although the synovial membrane was intact. From the pus which was evacuated from the interior of the joint a pure culture of B. aerogenes capsulatus was obtained, and here it was evidently behaving as a simple pyogenic bacterium. The after-history of this case gave nothing to suggest to those in charge that they had been dealing with suppuration produced by the common organism of gas gangrene. Guinea-pigs inoculated with a culture of this organism died within 24 hours from a rapidly spreading gangrene of the tissues.

In every other case we have found either a staphylococcus, B. coli, or B. proteus in the wound. The frequency with which B. coli appears with B. tetani suggests that its presence may be particularly favourable for the survival of this anaerobe. Of the 11 patients in whose wounds the bacillus of tetanus was found nine had been treated prophylactically with tetanus antitoxin at an early date, and at no time did any one of these exhibit any symptoms of tetanus. Two had not received any prophylactic injection, and of these one developed the disease[2] and the other did not. The last-mentioned case serves to demonstrate that a wound may become infected with B. tetani without tetanus resulting, and that quite apart from the question of antitoxin. There is, however, no reason to doubt that the prophylactic injection of antitoxin has been the means of saving the majority of these patients from the most serious disease arising from wound infection.

It is therefore of considerable importance to realise that a wounded man may be acting as a carrier of these dangerous bacilli for at least *two months* after the date of the wound, and probably for a much longer period, without any reason on clinical grounds to suggest that these bacteria are present in the tissues.

Whatever the nature of the wound, whether it be slight or severe, without a careful bacteriological investigation it is impossible to be sure there are no tetanus spores lurking in its depths. B. aerogenes capsulatus was found on 13 occasions. Although its presence was not confined to any single type of lesion, yet we gradually learned to suspect certain varieties of wounds of harbouring it. Deep wounds with considerable damage to soft parts or bone, with a profuse and perhaps offensive discharge, are the most liable to yield cultures of this organism. It seems certain that some special conditions must be present in order that B. aerogenes capsulatus may give rise to gas gangrene, and that in the majority of infected wounds it is either rapidly eliminated or it settles down to a purely pyogenic or even saprophytic life. One would naturally expect to find an organism of this nature more frequently in recent than in old wounds, and on the whole we have found this to be so. Nevertheless, the table shows that the bacillus is able to survive at least four weeks from the date of the infection.

The facts here presented concerning these two potentially virulent and highly resistant spore-bearing organisms make it undoubtedly very advisable that special precautions should be taken in the sterilising of surgical instruments which have been used in operating upon wounds. Occasions occur when instruments are merely "introduced" to the boiling water, but our bacteriological findings are sufficient evidence of the danger that may arise, more especially with the massing together of wounded which must take place owing to the present circumstances. In one instance a culture of the B. aerogenes capsulatus was obtained from a suppurating wound, but the bacteriological findings were not taken into account. The limb was amputated, but death occurred from rapidly spreading gas gangrene within 30 hours.

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[2] Wounded at Ypres on Nov. 16th, and received antitoxin at onset of tetanus on Nov. 28th with good result.

The bacillus coli and unclassified coliform bacilli.—In 11 cases a true colon bacillus was isolated from the tissues and gave the recognised tests for this group of bacteria, while in 15 instances coliform bacilli were cultivated. Full cultural tests were applied in every instance, but the results were too varied to assist us in classifying these bacteria. In many instances these coliform bacilli were tested on guinea-pigs or mice by subcutaneous and intraperitoneal inoculation, but no fatal result ensued. Now as to the importance of these bacteria in the tissues. Although the B. coli is capable of exciting a rapidly spreading infection of the peritoneum, yet a similar infection of the connective tissue is uncommon. Experience teaches us that a rapidly spreading infection of the tissues which resents active interference is generally a streptococcal infection in spite of the presence of the bacillus coli or a coliform bacillus in the discharge, but owing to the difficulty in isolating streptococci under such circumstances the presence of these bacteria may not always be recognised. We have no record of an actively spreading infection of the tissues or severe irritable wound from which colon bacilli or coliform bacilli have been obtained in pure culture, but always in association with streptococci, which corresponds with infective lesions of a similar type met with in ordinary practice.

It may be of interest to mention that the B. coli and coliform bacilli were cultivated from lesions widely different clinically, such as a surface granulating wound of the hand with little discharge, and a foul suppurating and deep tissue infection with copious exudate. In two instances out of the total of 26 a colon bacilli was present in pure culture, and in each case the discharge was slight in amount and the temperature was normal.

B. proteus and B. pyocyaneus.—True proteus bacilli were isolated from 5 cases and an atypical proteus bacillus from 2. These cases were all examples of chronic tissue infection with sinus formation and abundance of purulent discharge. The B. pyocyaneus was found in 4 cases, all essentially chronic, with copious discharge from deep wounds, exactly the type of lesion this organism produces among civilians.

Streptococci.—Streptococci were cultivated from 41 of this 100 cases, and in all but a few instances the strain was isolated and put to a considerable number of tests. They were found with about equal frequency in recent wounds (1–2 weeks) and in wounds of longer standing (3–10 weeks). Some 30 strains were grown in the customary series of sugar-containing media in order to test their powers of fermentation, and, if possible, to group them according to some commonly used system of nomenclature, such as that of Gordon. But these tests were found to be of no assistance either towards classification or towards estimation of the virulence of the cocci. Numerous strains were also tested for hæmolysis and for pathogenicity to mice. In the hæmolytic test we made use mainly of a fluid medium consisting of citrated broth to which a little fresh sterile human blood had been added. Occasionally a blood-agar slope or plate was primarily employed, but if this test proved negative it was always repeated with the fluid medium, which contained human red cells and plasma, since this method was found to be more reliable.

Of 19 strains thus investigated 16 were hæmolytic and 3 were not. Nine of the hæmolytic strains were injected intraperitoneally into mice, with the result that 7 were pathogenic and 2 harmless. Of the 3 non-hæmolytic strains, 2 were tested upon mice, with one positive and one negative result. The strain which failed to hæmolyse, but was pathogenic to the mouse, was isolated from a brain lesion due to shrapnel. The patient was operated upon and developed diffuse meningitis shortly after the operation; a streptococcus (presumably the same strain) was grown from the cerebro-spinal fluid, and now proved to be both hæmolytic and pathogenic to mice.

Thus, on the whole, the power of hæmolysing human blood tends to run parallel with that of causing acute disease in the mouse. But neither of these phenomena appears to throw much light upon the question of actual virulence to the human being. It is quite common to find strongly hæmolytic streptococci in trivial healing wounds which are giving rise to no appreciable constitutional disturbance. Therefore one may conclude that a hæmolytic streptococcus although highly virulent may be held in check in the tissues from which it was cultivated.

These wound streptococci often appear to possess only a low degree of virulence, yet it is well to remember that they are capable of undergoing a sudden great increase of virulence if the barriers of protection which the body has set up be broken down by an over-zealous operator or even by quite insignificant manipulation.

The diphtheroid group.—Diphtheroid bacilli were met with on 15 occasions, but clinically the sources from which the bacilli were cultivated were various. Some were granulating wounds, others were deep sinuses—in fact, no special type of wound in particular. These bacilli could not be credited as the direct cause of the infection, although indirectly they may play an important part. In some instances they grew more abundantly anaerobically than in an atmosphere of oxygen, and examples were met with of an orange growth on agar similar to the staphylococcus aureus. Morphological characters were variable, but the most striking type presented the well-known zebra markings.

Staphylococci.—The orange and white staphylococci were cultivated from wounds on numerous occasions, but no further reference need be made to these bacteria on the present occasion.

The striking feature of these results is the persistence of the dangerous anaerobes in the tissues for as long as 65 days from the date of the original injury. It is true that in most cases neither tetanus nor gas gangrene developed, but in one instance a rapidly fatal infection from the bacillus aerogenes capsulatus occurred after an operation.

From a bacteriological aspect it is surprising that the anaerobes do not flourish to a greater extent than even our records show, as every requisite for anaerobic life is present. There is in a deep wound dead tissue, sufficient moisture, and utter darkness owing to the abundance of surgical dressings, while in addition aerobic bacteria which are usually present utilise the remainder of the oxygen. The number of wounded in hospitals and institutions of various kinds at the present time is sufficient reason that every possible advantage that bacteriology offers should be taken so as to avoid the spread of infection from patient to patient, or even in the same patient, quite apart from the actual treatment of wounds by various measures.

THE NAVAL MEDICAL COMMITTEE AND WOUNDS IN WAR: A CRITICISM.[1]

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THE committee consisting of Sir W. Watson Cheyne, Bart., Fleet-Surgeon P. W. Bassett-Smith, C.B., R.N., and Mr. Arthur Edmunds, M.S. Lond., F.R.C.S. Eng., after experiments carried out on dead material, guinea-pigs, and one man, have issued "borsal" and cresol paste to the navy and the army with the expressed hope that the wounds for a certain period will be treated in the manner suggested in their instructions. The committee, realising the grave responsibility they have assumed in advocating the general use of borsal, appeal to the profession to examine carefully the method and results before passing judgment. In response to this appeal, having seen the results of the treatment in just twice the amount of clinical material at the disposal of the committee, I propose to offer some criticisms on the suggested method.

Sir W. Watson Cheyne had not then been to the front as he tells us, and said that he had no opportunity of testing borsal because "there have been no naval wounded for several weeks, and dockyard and ship accidents have been much fewer than they were." He quotes in all four cases, but one only by the combined borsal and cresol method, and I think it is worth while going over these, as it is really from the results obtained that the committee have advised the issue of the "borsal powder and cresol paste," which, I believe, is now carried on every ship and is being issued to the army.

CASE A.—One was a compound wound of the interphalangeal joint of the thumb. It was a machinery accident with much soiling of the wound. A 20 per cent. carbolic acid paste was at once squeezed into the wound from a paint tube, and from time to time some more was applied on the surface. The interesting point of this case was that although the skin had never been cleaned up or the wound cleaned out, and although practically the entire terminal phalanx was dead, yet for ten days there was no local or general disturbance and no fever, no pain, swelling, or suppuration. On the tenth day the surgeon cleaned it out and applied ordinary dressings. Two days later sepsis appeared, with suppuration up the tendon sheath, just what ought to have been present ten days earlier.

The argument is that there was no suppuration until the tenth day, the infection being kept down by the application of 20 per cent. carbolic paste. Clinically, one knows that machinery accidents very often do not go septic. The sepsis appearing in the tendon sheaths on the tenth day rather suggests that the drainage had been obstructed by the paste, and the tissues were therefore finally attacked. The result of the treatment was death of the phalanx and suppurative tenosynovitis.

CASE B.—Another case was an accidental pistol wound of the buttock with fairly large entrance and exit openings. Carbolic acid paste (20 per cent.) was freely introduced and no inflammation occurred along the track of the wound, and ultimately there was only a small granulating sore at one of the openings, which healed in a few days.

The primary union of clean bullet wounds treated on ordinary surgical lines is proverbial.

CASE C.—A third case was a bad scalp wound with denuded bone which was filled up with a 20 per cent. carbolic acid paste. Here, also, there was no disturbance, and after ten days the small sore which remained was dressed with weak boracic ointment.

That there should have been any sore at the end of ten days is surprising, considering how well scalp wounds heal when treated on general surgical lines. A machinery accident, an accidental pistol wound, and a scalp wound treated at once are in no way comparable to the bulk of the wounds met with in the field.

CASE D.—On the skin cresol is rather more irritating than carbolic acid. As to the action of the paste in wounds we have had only one really test case, that of a man who shot himself in the face and head; the bullet entered just in front of the mastoid process, and ran upwards and forwards and came out at the inner side of the forehead near the middle line. In its course it broke up the upper jaw and the malar bone, passed through the eyeball, tearing it to tatters, and smashed up the lower and anterior walls of the frontal sinus. The fracture of the frontal bone extended into the nose, where also the dura mater was torn, but there were no cerebral symptoms at first. The remains of the eyeball were removed and also one small, quite loose fragment of bone from the supra-orbital region. The 20 per cent. cresol paste was then freely introduced into the whole track and cavity of the wound. The patient lived four days and died of his intracranial injuries, but during that time there was no inflammation or sloughing or suppuration from the wounds; they were quite aseptic, and no bacteria could be found in pieces of blood clot examined on the second and third days. On the second day a cultivation was made from the end of the drainage-tube where it projected beyond the wound, and only six colonies of cocci were obtained. Naturally one would have expected some growth from that part, and it is surprising that it was so little. The patient developed symptoms of meningitis and died on the fourth day. On post-mortem examination suppurative meningitis was found, but there was no suppuration anywhere in the external wound where the paste had been introduced; indeed, although it communicated with the tear in the dura mater, the blood clot was lying in it without any decomposition.

This case was seen and treated by members of the committee. It approximates to the cases less heavily soiled with dirt and filth seen at the front, and yet what result is obtained? The external wound is clean, and suppurative meningitis occurs. I do not for a moment suggest that cases treated by other means do not develop suppurative meningitis, but surely such a case, which remains clean on the surface and septic in the deep and less accessible parts, is not one on which to base a line of treatment contrary to all modern experience and teaching. Further, the treatment in the cases reviewed has not been so successful as to warrant the broadcast issue of borsal powder and cresol paste *with instructions.*

Clinically, the idea that the paste will penetrate to any depth along a bullet wound through muscles is unsound. It is much more likely to drive on ahead any organisms which are at the entrance and which, pent up in a cavity deep in the tissues, will produce a severe suppurative process. If the committee could see some of the wounds, torn and ragged inside, plastered with dirt and pieces of cloth, they would, I hope, shrink in horror from the idea of sealing up this glorious cultivation medium with a greasy plug.

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[1] Published in the Journal of the Royal Naval Medical Service.

Dr. Willenborg, of the Pasteur Institute in Paris, visited me during April at the Belgian field hospital. He has a roving commission from the French Government to investigate gas gangrene. He told me that the outstanding fact he had learnt which was of value in the treatment of shell wounds and the prevention of gas gangrene was the necessity for thorough cleansing and laying open of the wound—in fact, adequate drainage.

The committee's experiments on guinea-pigs were invariably fatal if there had been any delay in the application of the paste, and in the field, under modern conditions, there must be many hours' delay before treatment. To quote again from the paper:—

> Assuming that radiation takes place *in all directions from the centre*, naturally the further away from that centre the more dilute will be the antiseptic substance.

This assumption is made from experiments with inert substances. It does not consider the living tissue or the serum and the various currents and counter currents produced by the breaking down of cells during the process of repair. Again:

> As a matter of fact, the soiling of wounds with earth is not likely to extend to any great depth, and the borsal, powdered over a wound, especially if it is well open and the bleeding has stopped, will probably overtake the severe infection, while the septic organisms carried on further will be dealt with by the cresol.

The soiling of wounds with earth is found to extend to a very great depth indeed. During the winter the uniforms were caked in mud, and large pieces of cloth were driven into the tissues by bullets and portions of high-explosive shell. In the summer it will be found that the fabric is infiltrated with the dust of battle.

> At any rate, the growth of organisms will be inhibited over a large area, till the patient reaches the dressing station, where the wound can be opened up and more thoroughly attended to.

This may be true in wounds of the saucer type. To make such a statement about deep lacerated wounds with a narrow opening shows unfamiliarity with the conditions existing. The natural out-pouring of serum from the lacerated surface will increase the tension deep in the wound, as the cork of borsal effectually prevents drainage. This bottling procedure is carefully insisted upon in the instructions issued.

The inhibition of growth on the surface of the wound does not matter in the least if, in the end, the depths of the wound are still infected. If members of the committee have tried to inject thoroughly a sinus of some standing with bismuth paste they will know how difficult it is, even in expert hands, and this thorough medication of the wound with borsal or cresol paste must perforce be left to the men in the fighting line if it is to be done at once. If it is to be carried out some hours later, when the infection has got a good hold, I cannot follow the surgery which advocates plugging up the main drain.

To quote further:—

> When the patient arrives at the advanced dressing station the treatment depends on circumstances. 1. If a large number of wounded have to be attended to, patients who have been treated in the above manner can wait, unless a good many hours have elapsed since the injury. In that case the orderlies should inject a little more paste into the wounds and powder them and apply a fresh antiseptic dressing while the patient waits his turn.

The presence of pus, cellulitis, or gas gangrene is not considered. The orderly would, in all probability, not recognise the conditions and simply increase the tension deep in the wound. He would report the case as being dressed, and, from the clearing hospital or dressing station, the man would be sent down to the base, incubating organisms in a carefully plugged living test-tube.

> 2. If it is a large or complicated wound—e.g., a compound fracture—it will be well in the first instance to clean and disinfect the skin, preferably with 1–20 carbolic lotion, then wash out the wound with peroxide of hydrogen and 1–20 carbolic lotion, remove pieces of clothing or accessible pieces of shell, snip away any tags of tissue and arrest bleeding. The wound being dried and held open, it can now be powdered with borsal and some cresol paste left in various parts of the wound. If it is widely open it may be well to put a few interrupted sutures in to bring the edges somewhat together and prevent the escape of the antiseptic and finally apply antiseptic dressings.

The first part of the instructions it might be possible to carry out in a clearing hospital. Certainly, in their entirety, they are impossible in the trenches and in the dressing stations behind the firing line. The second part is simply a résumé of the cleansing of any wound, and as it is obviously meant for qualified men its inclusion seems to be unnecessary. The stitching up of the wound at the end of 24–48 hours, which is commonly the time before the above treatment could be employed, is contrary to all experience gained during this and other wars. Whenever this has been done, almost without exception, the results have been disastrous.

> 3. If it is not a large wound, if the clot seems solid and it has been well powdered and plenty of paste introduced into it in the first instance, it is quite possible that sepsis may not occur, and if that seems likely all that need be done would be to squeeze a little fresh paste and dust some more borsal powder over the surface and the skin around and apply a fresh antiseptic dressing. These wounds will probably not require further dressing till they arrive at the Base Hospital.

If the clot seems solid and not septic, surely it is nature's dressing and should not be disturbed; it is the first process in primary union. If it is disturbed and the surface organisms squeezed into it, it becomes infected, as it is not claimed that borsal destroys the organisms but simply inhibits their growth. The use of the words "quite possible" in the first sentence and "probably" in the second, show that the surmise is entirely theoretical. The issue of the paste, therefore, is an experiment on a large scale based on evidence which is unsound from the bacteriological, pathological, and surgical point of view.

Finally, I quote two cases which are now in Guy's Hospital in the Officers' Section.

CASE 1. *Bullet wound through thigh on May 15th.*—The wound was through the muscles; entrance small; exit somewhat larger. Patient had field dressing applied. May 17th: Borsal powder and cresol paste injected (30 hours after injury). 18th: Operated on at Boulogne. Six incisions made in the thigh, which was very septic, and large tubes put in. 21st: Admitted to Guy's Hospital. Cellulitis was still present, and the patient running a hectic temperature. Further incisions were made and khaki cloth removed. 25th: On fomentations, &c., condition is improving.

CASE 2. *Bullet wound through the leg just above the tendo Achillis on May 16th.*—Seven hours later borsal powder and cresol paste were applied. May 18th: Operated on at Boulogne; eight incisions were made in the leg for cellulitis. 21st: Admitted to Guy's, and it was found necessary to make further incisions. 25th: There seemed a tendency for still further spread, and it may be necessary to operate again.

Both cases quoted are a type of bullet wound which generally gives little trouble and seldom requires this amount of surgical interference.

Sir W. Watson Cheyne, in a letter on May 22nd in the *British Medical Journal*, writes that: "The question of the exact method of dealing with wounds in man was left for further study, and our recommendations were merely tentative and open to alteration as experience indicated." However, the committee were so satisfied with the result of treatment in Case D that the Navy and the Army have been served with the powder and paste. He says that the whole aim of the research was to find a means to delay the growth of bacteria. The substance, cresol paste, did do this on non-living tissue, such as blood-clot, and to a less extent on animals. In its application to the wounds in war the committee recommend practically closing up the septic wounds with this substance, and from the success achieved when cresol was used by the committee, I cannot see their justification in transgressing one of the golden rules of surgery with regard to the drainage of wounds.

The committee assumed that the wound would be opened up, the pastes which had been introduced removed, and the wound thoroughly disinfected and drainage provided, &c. The actual cleansing of these wounds after the use of borsal is no easy matter. A great deal of hot water has to be used before the last trace of the black greasy pus can be removed.

Mr. Arthur Edmunds, who has been associated with the committee in their work, has gone to the Dardanelles. He is evidently armed with the paste, and may proceed to treat the wounds on the lines indicated in the paper. His previous experience has been that of the committee. I hope he will be guided by the conditions found in the field rather than on the assumptions of the laboratory.

THE DIVERSITY OF OPINION CONCERNING THE DIAGNOSIS OF TUBERCULOSIS,

WITH SPECIAL REFERENCE TO THE EXAMINATION OF CONTACTS.

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Now that tuberculosis schemes are coming into operation, all matters concerning diagnosis are of exceptional importance from the point of view of preventive as well as of clinical medicine. The personal element will always enter largely into the diagnosis of difficult cases, but a certain standard concerning fundamentals should certainly be adopted in order to render statistics comparable and permit of correct deductions from statements presented in reports.

The report of the medical officer of the Local Government Board points out remarkable variations in the proportion of notifications to deaths in the returns from individual administrative counties. This may be due merely to failure to notify or to the vexed question of diagnosis. Dr. Newsholme is driven to the consideration of death-rates for his statistics, as he considers that notification of new cases cannot be used as a trustworthy index of the relative prevalence of tuberculosis in different areas.

The reports of the medical officer of the Board of Education illustrate the same lack of uniformity in the consideration of this disease on the part of school medical officers. One of the most remarkable instances of what might be termed the lack of a common basis of diagnosis is given in the 1910 report as follows: "In Worcestershire, for instance, owing to the fact that one of the assistant medical officers diagnosed pulmonary tuberculosis in about 15 per cent. of the children examined, the percentage of cases discovered is 4·18. On the other hand, in Hertfordshire, out of a total of 12,772 children examined, one case of tuberculosis only was discovered." It is, in fact, the diagnosis in children that presents the greatest problem owing to the character of the infection and the tendency to appearance and disappearance of physical signs.

The remarkable prevalence of tuberculosis in children is an established fact. Dr. C. Riviere's figures from THE LANCET[1] are of particular interest as they refer to children who died from some acute disease (e.g., diphtheria) which was not tuberculosis.

	Councilman.	Baginsky.	Heller.	Hamburgher.	Ganghofer.
Number of necropsies ...	220	806	714	150	972
Number tuberculous ...	35	144	140	32	252
Percentage tuberculous	16	18	20	21	25·9

Newsholme,[2] in the section referring to inaccurate diagnosis in children, quotes striking figures from Coates and Landouzy on the question of the prevalence of tuberculosis in children, and also in relation to *deaths*, states that "in children the term broncho-pneumonia not infrequently conceals acute tuberculosis, especially when the 'broncho-pneumonia' occurs after imperfect recovery from such diseases as whooping-cough and measles." This is particularly important as referring to deaths; there is apparently always less reluctance to consider a case with a bad prognosis, tuberculous. In fact, it is to be feared that a recovery is often taken as proof in itself that the case in question was not tuberculous.

It is evident that in the examination of contacts two very important factors bearing on diagnosis are, generally speaking, constant—i.e., family history and exposure to infection. The examination of contacts should therefore show less striking differences in the percentages of positive diagnosis than any other systematic series of examinations, allowing, of course, for the smallness of the numbers. Dispensary reports from all over the country show some considerably different results in this respect, but it will be sufficient for purposes of illustration to quote from some metropolitan reports.

	Contacts.	Found tuberculous.	Percentage.
Paddington and Kensington	920	108	11
Wandsworth	541	54	9
Fulham	668	116	17
Woolwich	666	243	36
Lambeth	306	46	15
Bermondsey	281	85	29
Poplar	668	76	11
Hampstead	204	48	23

At Greenwich a total of 622 contacts were examined by three medical officers. Contacts were found tuberculous at the rate of 10 per cent., 5 per cent., and 18 per cent. respectively.

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[1] THE LANCET, vol. i., 1910, pp. 156, 185.
[2] The Prevention of Tuberculosis.

There appears to be a tendency to think of tuberculosis only as a condition of local injury, as an infection either of the lymphatic glands or the lungs, or the bones, or other definite parts of the body, and to consider it only from the point of view of the local results. Tuberculosis implies the poisoning of the system with a powerful nervous and muscular poison. The systemic changes are not merely those resulting from underfeeding or malnutrition, or what is generally understood by that term, but the signs of actual toxæmic poisoning. The indications of this are many, as, for example, the flabbiness of the skeletal muscles and at the same time their irritability, the thinning of the trapezius and deltoid muscles, giving the scraggy appearance and sharpening of the point of the shoulder, are particularly noticeable; the dyspepsia, anæmia, and diarrhœa, all of which may be present together; the temperature and character of the pulse; the glandular changes, not necessarily the gross glandular changes due to bacterial invasion of the glands themselves, but the pinhead multiple "micro-adenopathy." These are all manifestations of this powerful neuro-muscular poison.

A systemic poison which can produce such changes should certainly affect also the elastic and muscular tissue of the respiratory apparatus, especially the tissue of a lung exposed to a particular concentration of the morbid products through the lymphatic circulation. There is some reason to suppose that even in purely hilus tuberculosis tidal respiration and percussion note and quality and character of the breath sounds are affected at the apex, perhaps in the same way that loss of "brightening" occurs on X ray examination, though mechanical obstruction must not be forgotten.

Sir Robert Philip has compared tuberculosis with syphilis in this respect of systemic poisoning. The first infection takes place (for the purpose of illustration, by way of the tonsil in the "extra-tonsillar" lymphatic gland), is followed by lymphatic spread and glandular infection, followed again by widespread and various signs of systemic poisoning. It is surely misleading to divide the disease in one's mind as on a notification form into pulmonary or glandular; glandular with attention to glands, only from the point of view of possible caseation or condition of enlargement, and pulmonary with attention to pulmonary physical signs alone. There must be a tendency to do so, because when a report on a child is requested, it is, of course, particularly or altogether a report on pulmonary physical signs which is wanted, and although there may be every other evidence of tuberculosis, pulmonary physical signs may be slight or absent in the earliest stages. Unless, therefore, extreme care is taken, the difficulty of demonstration of pulmonary physical signs in children, and in some cases the evanescent character of the signs, will lead to considerable understatement of the prevalence of tuberculosis.

Then, again, what should be the proof that enlarged glands are in one case tuberculous and in another non-tuberculous—local conditions are misleading. A considerable number of children with an obvious cause for enlarged cervical glands, such as carious teeth, &c., suffer from tuberculosis (as proved by subsequent caseation) which may, of course, in some cases be a superadded condition. Therefore, to exclude as non-tuberculous all those children who show an obvious cause for the glandular enlargement will be to exclude a number of tuberculous. On the other hand, to notify all children with glandular enlargement as tuberculous would be ridiculous. There are also exceptions to every rule, and if a tuberculous infection becomes shut off and its products are unable to pass into the circulation, systemic evidences will not present themselves.

This is, of course, the difference between the infected person—which includes most of the population and must include all contacts—and the person who is really suffering from tuberculosis. There is also an obvious difference between the single, or infrequent, slight infection of the average person and the repeated massive infection which usually falls to the lot of the majority of contacts. Disputed points about which clinicians like Strümpell, Cornet, Fox, and Osler differ from such others as Aufrecht, Krönig, Lees, Riviere, and Goldsheider do not affect the broad aspect of the disease, and it is impossible that these questions could have produced the wide variation in diagnosis referred to. By no means do I wish to imply that the strictest attention should not be paid to the very earliest, slightest, and doubtful or debateable pulmonary signs, but, in fact, to point out that a phenomenon which, taken by itself, may seem bald and unconvincing, may assume a very different aspect when considered in conjunction with a history of infection and the signs and symptoms of widespread neuro-muscular poisoning, so obviously present in many cases classed as suspects or non-tuberculous. And also that many cases, including those (such as broncho-pneumonic and bronchitic) which from the multitude of their physical signs may present extreme difficulty of diagnosis, may have considerable light thrown on them when considered from the point of view of not merely a collection of pulmonary physical signs alone, but of what we know of the disease itself and of the power for evil of its morbid products on the entire system.

If the statistics concerning prevalence of infection are reliable, the probability is that a considerable number of children classed as suspects, or merely ill-nourished, are in reality tuberculous, though this is probably not of much account, as the majority of such children obtain as suspects all that is necessary for complete recovery. An important point, however, is that the first person applying for medical advice is not necessarily the most advanced case in a family with several tuberculous members, and failure to recognise the disease in the first case may mean that the infecting case is not discovered.

As notification is the first step to further investigation, the state of affairs with regard to diagnosis and subsequent notification pointed out by the medical officer of the Local Government Board evidently calls for careful consideration.

Greenwich, S.E.

THE HOME TREATMENT OF SCARLET FEVER.—Mr. V. Gray Maitland, medical officer of health of Nuneaton, in his annual report, after mentioning that the severe epidemic of scarlet fever had practically died out, expresses his conviction that cases treated at home did better and suffered fewer complications than those treated in the isolation hospital, particularly during an epidemic, when the wards were more or less constantly full. The home treatment of scarlet fever as practised in Nuneaton, the results of which were extremely satisfactory, meant that the medical man who notified a case and wished for the services of a nurse could have any treatment he ordered carried out by the nurse. Should the medical man leave the case entirely in the nurse's hands and cease to visit the case himself, the responsibility rested solely upon him, and not upon the borough council.

SOME PRINCIPLES OF DIETETICS.

BY J. SIM WALLACE, D.SC., M.D. GLASG., L.D.S.

SOME fifteen years ago the study of the etiology of dental caries led me to conclude that there must be something radically wrong with dietetic habits which were current in civilised communities. Further, it became impressed upon me that the dietetic precepts emanating from the highest quarters were possibly on the whole productive of harm rather than good, for it was by no means apparent that dental caries and other diseases resulting from bad dietetic habits were less common among the children of professors of physiology than among the children of the relatively ignorant poor. In fact, in time it became evident that the teeth of the children of poor peasants and even of those living in slums were rather less ravaged by caries than were the teeth of those who were supposed to be enlightened in the science of dietetics. Naturally I tried to inform myself in the subject. Among other things I bought a book on "Food and the Principles of Dietetics," and therein found quite a mass of information on the chemistry of foods and certain physiological details associated therewith, but I found remarkably little about the principles of dietetics. It is not, therefore, my intention to treat the subject as it is treated in books on dietetics, but rather to indicate that the principles of dietetics branch naturally from the tree of knowledge and bear fruit which is, or may become, of great value. I shall endeavour to state some principles of dietetics and add a few words to each of them.

The first principle I would refer to is that the kind of food for which man is adapted is the same in all essentials as that on which he has subsisted for countless generations. This principle is lacking in direct practical utility, first, because we may not know exactly the kind of food on which primitive man and his ancestors did subsist; secondly, because we are not all agreed with regard to what are the essential elements of food; and thirdly, because man has introduced methods of preparation of foods which, though in some cases they may destroy or impair certain essential qualities, so far improve others that a reversion to primitive foods would be a retrograde step. The value of constantly bearing in mind this important principle, however, will be seen from some of the others which follow, for without this one a certain guide for the search for others would be lacking.

The next principle to which attention may be briefly directed is that the anatomy of the organs of digestion indicates the type of food which is most generally suitable for the animal under consideration. This has long been recognised by those who have concerned themselves with palæontological zoology. It has, however, been most completely disregarded by medical experts, who have occupied themselves with framing a pap dietary for young children which still too generally holds sway. It is now many years since the dental profession recognised that the complete temporary dentition indicated that the most suitable diet for a child was not pap, but should be of such a nature that the teeth and jaws would require to be used. Moreover, we recognised still further that the coming into position of the milk teeth indicated how the transition from the purely milk diet to the solid and varied diet suitable for children with a complete dentition should be brought about.

A correlated principle which we have to note is that the physiology of the organs of digestion indicates to some extent the type of food suitable for man. To begin with, however, what is the outstanding physiological process for which the first part of the alimentary canal is adapted? The incisor teeth incise or cut off portions of food, and the molars crush, tear, or physically disintegrate it, while at the same time the saliva and mucus are secreted. The muscles of mastication concerned with the closing of the mouth are physiologically adapted for the exercise of enormous pressure in order to disintegrate the food, while the muscles which open the mouth are relatively weak. If the food were intended to be swallowed without undergoing physical disintegration in the mouth there would be no need for the large muscles and elaborate physiological coördination which at present (necessarily) exist. As far as the digestion of food is concerned, the obvious inference is that with regard to the mouth and teeth the physical disintegration of the food is practically its one and only function, notwithstanding the fact that we may have books written on "The Work of the Digestive Glands" in which the salivary glands are largely referred to. Do not let us be befooled into believing that the physiological *raison d'être* of the salivary glands is solely or even primarily for the sake of digesting food. The salivary glands exist and function for the purpose of facilitating the movements of the mouth and food, for facilitating its disintegration, for facilitating deglutition, and for helping to clean it out of the mouth as rapidly as possible after the disintegration of the food is sufficiently advanced. We have heard a great deal about the digestion of starch by the ptyalin, and although the amount is very trivial it was well dinned into us that the function of the ptyalin was to digest starch (for nutritional purposes). Why a copious flow of saliva is poured out when sugar is taken into the mouth did not seem to suggest the idea that the function of the saliva was to clear substances out of the mouth which might be or become harmful to the teeth and mucous membranes during or after mastication. So again, we were taught that acid vegetable foods gave rise to a copious flow of alkaline saliva rich in ptyalin, but physiologists were silent with regard to the why of the ptyalin in this case. That the flow of alkaline saliva was to neutralise the acid was indicated, but that the saliva similarly became alkaline on eating meat was not mentioned and the rationale of such alkalinity was not indicated. So, too, we were led by physiologists to believe that the reason why ptyalin did not exist in the saliva of an infant till it had reached about the sixth month was that up to this age the child should not get starch in its dietary. No doubt an infant should not get starch in its dietary before this age, but why a ferment from the pancreas capable of digesting starch before this age existed was not told to us. The fact that the appearance of ptyalin in the saliva synchronised with the cutting of the teeth and that the saliva exists chiefly for the physiological cleanliness of the mouth and for the protection and preservation of the teeth was apparently never dreamt of. Although, then, the physiological reactions of the saliva to food show us clearly that they are adapted chiefly for facilitating disintegration of food and deglutition and to get rid of certain substances commonly associated with foods which are or might become injurious to the mouth and teeth, it would be a mistake to argue that whatsoever stimulates the salivary glands should necessarily be regarded as specially desirable food. Rather should we surmise that in foods which excite a great flow of saliva there may be an element of danger, if for any reason the glands were not capable of responding adequately to the stimulus, or if the food were of such a nature as to hamper the saliva in its attempt to get it out of the mouth. There is, then, an element of danger in food which contains sugar in greater proportion than it exists in vegetable foods as presented in nature, and the physiology of the glands of oral hygiene indicates that sweets, bread and jam, bread and marmalade, and the like should not be eaten at the end of or between meals.

I have not referred to mucus. Its function is largely that of lubrication, but it is also instrumental in maintaining the hygiene of the mouth, and when thoroughly incorporated with the food during mastication it no doubt facilitates the action of the gastric juice when the food reaches the stomach. Possibly this explains to some extent why, as Dr. Francis D. Boyd has ably shown, digestion is so very much better when the food requires mastication than when it is given in the form of pap.

Here it may be noted that the various principles of dietetics cannot be altogether isolated from one another, or perhaps we should say that various principles serve to reinforce each other, so it need hardly surprise us that our fourth principle has been adumbrated in what has already been said. This fourth principle is most important not only because of its practical application, but also because it has hitherto been completely overlooked by physiologists. I refer to the principle that the food should be of such a nature or the meal so arranged that the mouth and teeth will be left physiologically clean at the end of the meal. When once this principle is stated no one can deny it, for it is simply absurd to say that meals should leave the mouth in an unhygienic state. The wholesale destruction by caries of the teeth in civilised communities, together with the equally wholesale destruction of the gums and alveolar processes resulting from oral malhygiene, should have been sufficient to call attention to the importance of this principle, and except among those physiologists and medical men who consider that the mouth and teeth are outside their domain, the principle is now fairly recognised amongst the educated. Since the teeth of animals and primitive man are kept in a hygienic state by their foods, it is a simple guide to say that food in its natural condition will, if taken at the end of a meal, leave the mouth clean. For various reasons I have drawn attention to the value of uncooked fruit for this purpose, and need only add here that unless we are to revert to primitive foods and eschew all the benefits which accrue from the preparation and cooking of foods, we must above all other principles insist on this one.

Moreover, recognition that food should be of such a nature that the mouth and teeth should be left in a hygienic state leads by extension to the idea that the whole alimentary canal should be left in a similar hygienic state, and this suggests a still wider field for investigation. I have read that the alimentary canal of children nowadays is little more than a series of pathological specimens, and although this may be an exaggerated way of putting it, there is too much truth in the remark; and so long as the craze for nutrition and calorie values is considered to the exclusion of the hygienic value of food what truth there is in the observation will remain.

"Science knows no geographical boundaries," it only recognises the narrower limits of its own departments. Being under less than no obligation, however, to follow decadent scientific methods, we may be permitted to transgress the boundaries of our specialty and deal briefly with a few principles which have little or nothing to do with the mouth and teeth. They have, however, to do with the hygiene of the alimentary canal. As overeating is a common cause of alimentary malhygiene I shall deal with a few principles associated therewith. The first I shall mention is well known but seldom brought into force as it should be among the civilised. It is simply that "Hunger is the best sauce." Throughout the whole course of evolution our progenitors must often have been hungry, sometimes very, very hungry. If hunger had incapacitated them for food when it was found there would have been little chance for them surviving; fortunately it had quite the contrary effect. Pawlow has shown by approved experimental methods that digestion goes on best when associated with hunger, and in a general way we all know that it is so. Nevertheless I have practically never seen an emaciated child with an unhygienic digestive tract treated by keeping food away from it, and the unhygienic state of the alimentary canal is never given a chance of becoming hygienic.

This leads us to state another principle—namely, that tempting the palate habitually is contrary to the dictates of evolution. As the importance of economy in nutrition has throughout all ages only been transcended by the importance of getting enough we should recognise that a flagging appetite is a signal that amply sufficient has been consumed. We may be assured that as in past ages unlimited supplies of food were seldom available, as much as possible would be eaten of any food which contained the elements for supplying immediate needs and a reasonable reserve for the immediate future without special temptation. One might have thought that a scientist who recognised that hunger was the best sauce might also have recognised this principle. Nevertheless we read in Pawlow's work on the digestive glands: "The custom of the chief meal of the day also corresponds with our physiological results. After this or that *hors d'œuvre*, perhaps also with a liqueur of brandy (especially customary in Russia), both of which are designed to awaken the appetite, the repast proper begins, and, in the majority of cases, with something hot, consisting mostly of meat broth (*bouillon*, different soups, and so on). After this comes the really nourishing food—meat of different kinds served in various ways, or, in the case of poorer people, stews made with vegetables, and therefore rich in carbohydrate material. This sequence of foods, from the standpoint of physiology, is quite rational. Meat broth, as we have already seen, is an important chemical excitant of gastric secretion. An attempt is therefore made in two ways to secure a free secretion of gastric juice to act on the chief food: first, in the excitement of the appetite juice by the *hors d'œuvre*; and, secondly, in the promotion of the flow by the action of the meat broth." It would appear from this quotation and other similar statements that no effort either in the way of chemical or psychic excitant has to be spared to secure the activity of what seems to be presumed to be an otherwise insufficient organ for carrying on the work of digestion. Pawlow's ideas are interesting and instructive; unfortunately, however, they are not principles of dietetics: rather are they principles of gluttony. Much that is written about the arrangement of the meal from the glutton's point of view may be interpreted quite differently and more correctly. The meat or vegetable broth which so frequently commences a meal may have little or nothing to do with stimulating digestion; they may have chiefly to do with economy. A proportion of the available nutriment in yesterday's joint might be lost if the remains were not boiled and the resulting "stock" used on the following day. The words "stock" and "*pot au feu*" both suggest this interpretation. Pawlow follows what I have already quoted with the sentence: "The usual termination of the repast is also, from the physiological standpoint, easy to be understood. The chief meal is generally ended with something sweet, and everybody knows that sweets are pleasant. The meaning of this is easy to guess. The repast, begun with pleasure, consequent on the pressing need for food, must also, notwithstanding the stilling of hunger, be terminated with an agreeable sensation." Let us consider what is meant by "something sweet." Jam rolls, bread-and-honey, chocolate, &c., may all be recognised as something sweet or sweets, but yet, as it appears to me, his meaning in saying that the meal should be terminated by something sweet, yet which does not burden the work of the alimentary canal at this time, is not at all clear. It is quite obscure unless (which may be his meaning) we assume that sweet things do not burden digestion at this stage. But this would be quite erroneous. He refers also to acids, and attempts to show how acids one way and another assist digestion. He never appears to have dreamed that acids in foods were concerned with dental hygiene; in fact, the whole of his arguments indicate a conviction in the insufficiency of man's organs of digestion except when they are excited, whetted, and tempted by all sorts of psychic and chemical stimulant, and the philosophy of the correct termination of the meal is overlooked.

That the gustatory secretions should be stimulated at the end of a meal, not by sweets but by food of a natural, hygienic, or detergent nature, is evident to all who admit the principle that the mouth should be left physiologically clean. Now what does so most effectually? Fresh fruit certainly does; not only the dilute sugars but the acids, the aromatic and even the acrid substance in the fruit do so most effectually. Fruit contains but little nutriment, and its real value is hygienic and not nutritive—much less is it a digestive tonic. Foods in the form of sweets, jam rolls, bread and marmalade, chocolate, &c., are to be condemned absolutely as meal terminals, as their effect is the opposite of fruit, which leaves the mouth in a hygienic state. Read in the light of my theory I believe Pawlow's experiments are most instructive. Read in the darkness of the old craze for nutrition they are misleading, dangerous, and contradictory.

The amount of food eaten should not be regulated by principles of gluttony: it should be regulated indirectly by recognising the principles of dietetics. That the palate is a useful guide is not to be denied, and when it is given a chance to act it acts usefully. If the palate is given the opportunity to discover and appreciate the quality and quantity of the food which passes it, as when the food requires to be disintegrated and retained in the mouth for a time, then it will be a useful guide. If, on the other hand, food is given in the form of pap and is slipped past the palate without mastication, as it so often is in the feeding of young children, and geese which are being stuffed for *pâté de foie gras*, then the palate is but an imperfect guide both as regards quality and quantity. Nevertheless, let me say that instinct, custom, and common sense are not invariably to be relied upon. A new environment may come into existence relatively suddenly and the safeguards of necessary limitations existing in the aboriginal environment may disappear. Thus, for example, a relatively unlimited supply of carbohydrate foods may now be easily procured; in addition to this a gratuitous advocacy in influential quarters of the things most to be guarded against may usurp the place of natural limitations, as, for example, the advocacy of highly nutritious foods, the value of sugar as an economical foodstuff or as a proteid sparer, the advocacy of jam and marmalade instead of butter on bread, or the extolling of cocoa and chocolate instead of more hygienic and cheaper foods. It is for reasons such as these that we must have something more than instinct and custom. We need the principles of dietetics and a touch of common sense to be able to coördinate and make practical use of them.

With regard to a balanced dietary little need be said; the principles which regulate this too are similar to those which regulate the amount. Like the amount it is very variable, and if the organism, when restraints such as nature presents are imposed, is not fit to seek for and procure the balanced dietary required, no artificial endeavours will be likely to avail in the long run. The possibility of getting a fair choice and variety is of course necessary. Variety, however, should not simply be with regard to proteid, carbohydrate, fat, &c.; it should include also *uncooked* food. Fresh fruit, vegetables, and gustatory stimulants without regard to calories at all are necessary. Throughout the whole course of evolution uncooked food was consumed, and we certainly have not as yet sufficient evidence to make us disregard the probability that certain essential qualities are destroyed by cooking. Possibly the craze for having everything made easily digestible and sterilised before it enters the mouth accounts for much dyspepsia, and may explain why uncooked milk though full of germs, is such a useful drug in restoring what is sometimes necessary for healthy digestion.

I indicated above that restrictions on eating certain foods should be imposed to compensate for the lost restraints which nature imposed. If restraints in the nature of taxation for revenue on consuming alcohol, tea, and coffee are conducive to more good than evil, then surely the taxation of sugar, sweets, chocolate, and cocoa might for similar reasons be imposed, for, as Sir William Osler has maintained, decayed teeth are responsible for greater harm to the community than alcohol. Surely the proportion of misery which alcohol causes is not greater than the amount of dental troubles brought on by the eating of sweets. Indeed, Dr. Wheatley's statistics with regard to sweet-eating and caries clearly show this to be the case.

A further principle to which we may refer is that economy in diet is beneficial physically and morally. A long sermon might be preached on this subject; it is not, however, my intention to do so, firstly because it would be more instructive to hear how it is done from a housewife with a family, let us say, of five children and a husband with 30s. a week. Secondly, because it involves other considerations besides caloric or hygienic values. Thirdly, because the poor housewife in general does exceedingly well with the money at her disposal compared with those who usually give advice to this class. She does not require to be told that bread, oatmeal, and potatoes are economical compared with many other foods often belauded in medical journals, nor that cheap cuts of meat or cheap cheeses are of as high nutritive values as the more expensive kinds. All that I would say with regard to this principle is that to judge the value of a food by laboratory tests regarding its calorie value has been, and is, most misleading. A food such as uncooked fruit may have a high hygienic value. This may at times be wanted, but though it has calorie value is valueless when it is not wanted. Moreover, the judging of the cheapness of food by the amount of calories procurable from a given sum has led to advice which is worse than useless. Because an amount of sugar representing a large number of calories can be bought for a relatively small amount, it has been argued that sugar is an important and valuable food *for the poor*. Since, however, force of circumstances compels the poor to obtain the great bulk of their nourishment from bread or cereals and potatoes, and inasmuch as these contain relatively a superfluity of carbohydrates every penny spent on sugar by the poor is, from the point of view of nutrition, simply wasted. But this is not all. The sugar is often taken in a particularly obnoxious form, either as sweets between meals or as jam spread upon bread. Not only then is the money spent on the sugar wasted, but the fruit which is made into jam has most of its virtues destroyed as far as oral hygiene is concerned, and this at the considerable expense which is entailed in reducing it from the hygienic and palatable form in which nature provides it to the unhygienic form in which we see it prepared to destroy the teeth of the present day.

Another principle which should be considered by those who issue dietetic precepts is that functional activity is generally necessary for the most perfect development of an organ. A conspicuous illustration of this may be seen in the muscular development of the blacksmith's arm. This principle applies also with regard to the development of the salivary and probably also to other glands for the hygiene of the alimentary canal. Similarly without any doubt the muscular development of the organs of digestion is affected by the physical nature of the food. This is notably so in the case of the muscles of mastication; moreover, the development of the muscles of mastication has a distinct influence on the development of the jaws, and this again has its influence on the arrangement of the teeth. The anatomical perfection, then, of the first part at least of the digestive apparatus of man is quite appreciably affected by the physical nature of the food consumed in childhood.

I might refer to other principles which indicate, for example, that eating between meals should be avoided; that the concentration of the different elements composing foods (especially sugar) should not exceed the concentration habitually found in such foods as man throughout his evolution must have subsisted upon; that three meals a day are to be preferred to any greater number, &c.; but as these and other principles dealt with in this paper have been gone into in much greater detail in my books there is no need for further elaboration at present.

I should, in conclusion, like to refer to two reasons for bringing forward this communication. The first is to indicate that principles of dietetics might be formulated; and the second that the principles of dietetics or the value of foods cannot be established by those who set up laboratory tests and standards as criteria. Nor can they be deduced from the most elaborate statistics having reference to calorie values. The accumulation of statistics on nutritive values, however accurate, gives no more guide to hygienic values than do hygienic values give a guide to nutritive values, and the use of such statistics as a basis for generalising only prevents us from doing what science ought to do—namely, to methodise knowledge and reduce it to principles.

THE STERILISATION OF ALBUMINOUS CULTURE MEDIA BY ETHER.

BY PAUL FILDES, M.B., B.C. CANTAB.,
AND
L. W. RAJCHMAN, M.D.
(*From the Bacteriological Laboratory, London Hospital*—Professor WILLIAM BULLOCH, F.R.S.)

AT the present time, when many require sterile serum and ascitic fluid for the cultivation of certain bacteria, it may be opportune to publish a method for the sterilisation of such materials which we have utilised successfully.

When sterilised by heat, serum, and in particular horse serum, is apt to undergo changes which render it unsatisfactory for use. For instance, many samples of horse serum as obtained at a slaughter-house when heated to 60° C. become more or less completely "set," and thus cannot be mixed with other constituents in a culture medium. Further, the method of sterilisation by heat as applied to such fluids is far from being invariably successful in destroying contaminating bacteria.

Various volatile antiseptics, such as chloroform and toluol, have therefore been used for this purpose, but in our hands these additions have not always produced sterility, and, further, have the disadvantage of throwing down precipitates which take months to settle completely. On the other hand, ether as used by Ori[1] has been entirely satisfactory.

We have applied the method in the following way. 1. The serum or ascitic fluid is collected without any particular aseptic precautions and enclosed in a well-stoppered glass bottle. In the case of the ascitic fluid, which varies greatly in reaction, acid or alkali is added to render it neutral to phenolphthalein, and, if necessary, it is filtered through paper. 2. Ordinary methylated ether is added to 3 per cent. and the stopper tied in. 3. The bottle is then placed in a water-bath at 45° C. for one hour or longer to ensure that the serum is actually heated for the full time. 4. At the end of this time the fluid is found to be sterile and is stored for use. 5. When required a sample is removed from the bottle and placed in a sterile test-tube or other vessel. The test-tube is then thoroughly agitated in a water-bath at about 55° C.

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[1] A. Ori: Biochemisches Centralblatt, 1906, v., 193.

and the ether will rapidly boil. When the ebullition has ceased the material will be ready for use. The ether will not boil unless the tube is shaken, and it must not be allowed to remain in the bath long enough for the serum to become thoroughly heated.

If the blood corpuscles have not been entirely separated from the serum before sterilisation they will be completely laked by the hot ether, and the resulting medium will be more or less deeply stained with hæmoglobin, but nevertheless quite transparent. No precipitation or cloudiness appears during the process; on the contrary, the fluids are rendered unusually clear. Within our experience this method has never failed to sterilise either ascitic fluid or serum.

Among the more obvious advantages of this procedure over any over, it will be noticed that the albumins are unchanged by heat, and thus the fluids are as efficient media as if they were collected aseptically from the living animal. The sterilisation is rapid and certain to such an extent that it is unnecessary to prove the sterility before use. Finally, the method is applicable to the preservation of certain immune sera; thus we have found that the activity of hæmolytic immune serum is not reduced by ether sterilisation.

London Hospital Medical College.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

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A CASE OF TETANUS OCCURRING TEN WEEKS AFTER INJURY.

By ALEXANDER DON, F.R.C.S. EDIN.,
MAJOR, R.A.M.C. (T.F.), 1ST SCOTTISH GENERAL HOSPITAL, ABERDEEN.

A PRIVATE of the First Gordon Highlanders, aged 40 years, received a shrapnel wound on Dec. 21st, 1914; the bullet entered the right shoulder, fracturing the head of the humerus, the glenoid cavity, and the body of the scapula, and emerging opposite the inner scapular angle, 2 inches from the centre line. The wound was cleaned on admission on Dec. 31st. The scapula was much comminuted and several loose pieces were removed. Antitetanic serum was administered two days after the injury (Dec. 23rd) at Boulogne. On Jan. 28th, 1915, he was sent to Aboyne Auxiliary Hospital, and was re-admitted on March 2nd with symptoms of tetanus. The tetanus bacillus was discovered in the pus and in a piece of bone which extruded from the wound.

Three thousand units of serum were given the same night subcutaneously, also gr. xxx. potassium bromide and gr. x. chloral hydrate every four hours. Up to March 18th 147,000 units in all were given, doses varying from 3000 U.S. units a day to 20,000, according to the condition of the patient as regards frequency of spasms. It was noted that the severity of the spasms and of pain varied inversely as the number of units injected. On three occasions, March 4th, 5th, and 6th, he had 4000 units intravenously, by puncturing a dilated vein in the arm through the skin. On all these occasions a distinct red irritated area appeared within the next 24 hours.

Twice an attempt to give an intrathecal injection was made. At the first attempt no spinal fluid escaped, and the operation was abandoned. His back was very much curved by the opisthotonic spasms, but from daily experience of spinal anæsthesia I feel that I had reached the dural sac. On the 6th he was very bad, and a second intrathecal injection was attempted. Again no fluid escaped, but 2000 Lister Institute units were injected at high pressure, and the night following he became unconscious, passing fæces and urine in bed, and seemed moribund. He appeared to have cerebro-spinal meningitis, which was attributed to irritation from the serum. He recovered somewhat towards morning, and became conscious again shortly after.

For some days his condition was very critical, but by March 18th the spasms had entirely ceased, and no more serum was given. It seemed that the concentrated serum, supplied in 4000-unit ampoules, was irritating both intravenously and intrathecally. Also that the effect of the serum in controlling the spasms lasted for less than 24 hours, and modified the severity of the spasms in three or four hours after injection. A quarter of a grain of morphia controlled the pain and gave a more restful sleep than the chloral hydrate with the bromide. Morphia was not, however, given except during the night, and on instructions. Chloretone rectally in olive oil had no marked effect.

The patient all along took nourishment well. The wound was in no way red or inflamed. The spasms were most severe at first on the side of the injury and at the root of the neck.

The long period between the wound and the first symptoms of tetanus suggests either (*a*) a recent infection, or (*b*) a delay in the appearance of the disease, due to the prophylactic dose given at Boulogne. The pulse-rate reached 140 on March 5th and 6th at night, but the temperature was seldom above normal, and seemed to depend more on the amount of discharge from the wound than on the severity of the tetanic spasms. The patient is now progressing satisfactorily, but there is still some "position" rigidity, which is gradually wearing off.

COMA IN A CHILD.

BY J. H. DONNELL, M.B., B.C. CANTAB.,
CAPTAIN, R.A.M.C. (T.F.).

ON Saturday, May 16th, 1914, at 7 P.M., I was called to a case which presents some interesting speculations.

The patient was a boy, aged 8 years, residing in a neighbouring village. He was in a state of coma. The history obtained was that after running about a cricket-field on that rather warm afternoon, he had come in to tea, and during this meal, at 5.45 P.M., had suddenly become unconscious. There were no convulsions at the time, merely unconsciousness. When I saw him his limbs were flaccid, his pulse and colour good, the breathing was quiet, temperature 99° F., and the pupils were moderately dilated but reacted to light. I inquired from a brother who had been with him for the possibility of any herbal or other poisoning, but failed to elicit any information. Two drachms of castor oil in milk were slowly given by the mouth. At 8.45 P.M. convulsions set in and continued with but brief intervals till 10.15, when they became less frequent, the last occurring at about 11.30. He remained unconscious until 3 A.M. During this period the pulse and colour were good. The information was now elicited that some boys had said the lad had eaten some chestnut leaves. Later, after recovering consciousness, he vomited and there were some "green" red currants in the vomit. On questioning the boy on the morning of the 17th he confessed to having eaten unripe gooseberries and green red currants, but denied eating any chestnut leaves. He had never previously had convulsions in his life nor any epileptic fits, neither was there any history of similar conditions in the family. On this morning he complained of slight gastric pain, but otherwise he appeared well, and the castor oil had been effective.

The details of the above case suggest the question whether it really was a case of poisoning from the unripe fruit. I take it that in children convulsions are due not to an intoxication but to a gastro-intestinal irritation; also the patient was old for an infantile convulsion, and the sequence of coma first and convulsions later is not of the usual type. The sequence is equally wrong if an epileptic fit is suspected, and, as pointed out above, if it was an epileptic fit it was his first, and rather an unusual one in its characteristics.

Hinckley.

Medical Societies.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Adeno-carcinoma (Mesothelioma) of the Kidney.—Congenital Cystic Kidneys.

A MEETING of this section was held on May 7th, Professor E. J. McWEENEY being in the chair.

Mr. T. T. O'FARRELL read a paper on a specimen of Adeno-carcinoma (Mesothelioma) of the Kidney. The specimen was a tumour of the left kidney removed by operation by Dr. M. C. Staunton, to whom Mr. O'Farrell tendered his thanks for leave to exhibit the specimen. The patient was a girl aged 6 years. Since she had been two years old she suffered from vague abdominal uneasiness and for the past two years the abdomen had been noticeably distended. There were no marked symptoms apart from occasional attacks of pain; there had been no wasting, hæmaturia, or evidence of any secondary deposits. Since operation the child appeared much improved and at the present time is running about apparently in the best of health. To the naked eye the kidney was uniformly enlarged, showing some prominences in places; the tumour seemed continuous with the organ, but in part, more particularly towards the pelvis, the kidney substance was flattened out and formed a shell about the tumour. The specimen measured 15 by 9 by 7 cm. On section the tumour was soft and divided into distinct lobules, which varied in size from 8 cm. to 0·5 cm. in diameter. The greater bulk of the tumour was towards one pole, but the kidney substance was almost everywhere infiltrated by the growth. Microscopically sections taken from different parts showed typical adeno-carcinoma, with regular and irregular acini. After careful examination no other neoplastic cellular element, such as sarcoma, could be found. The naked-eye appearances of the specimen exhibited, taken with the youth of the patient, were strongly in favour of a diagnosis of teratoblastoma, a not uncommon kidney tumour of children. But though he kept in mind that in these tumours one element—the carcinomatous one—may preponderate, the specimen exhibited could not be regarded as such, for not even a trace of other element than the carcinomatous one could be found, and hence he thought it should properly be called a true blastoma, a tumour arising from unpotential cells, in this case a mesothelioma, and accordingly an extremely rare one in such a young patient.

Professor McWEENEY said that after examining Mr. O'Farrell's microscopical specimens he had no doubt that, apart from embryological considerations, the tumour should be called an adeno-carcinoma.

Professor H. METTAM said he did not see why a new growth in the kidney should not be of a compound papillomatous nature, such as is met with in the ovary.

Mr. O'FARRELL, in replying, said he was pleased to have had his diagnosis confirmed as to the adeno-carcinomatous appearance of the specimen. The presence of muscle fibres was, he thought, a not uncommon finding in kidney tumours, and was probably due to inclusions from the sclerotome.

Professor McWEENEY exhibited the Kidneys of a male, aged 47 years, who died at the Mater Misericordiæ Hospital in a uræmic seizure. The patient was alcoholic, but had enjoyed good health until three weeks prior to admission, when he began to suffer from "fits." He complained of headache, tenderness over the left hypogastrium, violent pains in the calves of his legs, and diarrhœa. The seizures consisted of clonic spasms lasting about 15 minutes, giving place to coma, with stertorous breathing, which lasted about three hours. The pupils were unequal and knee-jerks absent. After a seizure the patient was quite collected and intelligent. On palpation a large tumour could be felt in the left hypochondrium. The patient only lived two and a half days after admission. Shortly before his death a white frost-like efflorescence was noticed on the skin of the face. The urine had a specific gravity of 1010, and contained a small amount of albumin. Samples were difficult to obtain, and it was not fully examined. At the necropsy the left kidney measured 20 by 10 by 10 cm. and weighed 1250 grammes. The right measured 17 by 10 by 8 cm. and weighed 850 grammes. The pelves and ureters were remarkably small. The kidney substance was reduced to small patches of parenchyma wedged in between innumerable cysts, and there was no distinction between cortex and medulla. The cysts were of all sizes up to that of a walnut, and the contents of some were thinly liquid, whilst others contained solid translucent brownish material like inspissated glue. Some of the cysts contained minute yellow spherical concretions with laminated and radiated structure, and consisting of an albuminous matrix with lime salts—chiefly carbonate. The largest seen measured 0·3 mm. in diameter. Microscopically very few glomeruli were visible, and of these the majority were hyaline, with a laminated Bowman's capsule. The cysts were lined with a single line of cubical epithelium, tending to disappear in the larger ones. The connective tissue was much increased and contained patches of lymphoid cells and unstriped muscle. There were patches of cells of epithelial aspect lying free in the connective tissue and suggestive of carcinoma, but presenting no evidence of mitotic activity.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held at the West London Hospital on June 4th, Colonel T. H. Hendley, I.M.S., being in the chair.—Dr. F. S. Palmer read a paper on the Functional Palsies and their Recognition, in the course of which he said that excluding cancer and tuberculosis there were few terms more awe-inspiring and loosely applied than that of paralysis. To the lay mind its significance was serious and unmistakable, and the popular view was probably based on the results seen in organic cases alone. The recognition of the functional examples was of paramount importance to the clinician. No distinction could be drawn between the words hysterical and functional as applied to paralysis. Organic disease and functional disorders might co-exist, as sometimes seen in cases of cerebral tumour. Many grave diseases of the nervous system developed on functional lines and for a time masked the underlying cause, especially the irregular forms of disseminated sclerosis; in their earlier stages they were sometimes indistinguishable. The diagnosis of the functional palsies was made by the exclusion of organic signs, evidence supplied by the examination of reflexes, and the recognition of hysterical personality. Ordinarily recovery was the rule except in long-standing cases with fibrotic changes in the joint and tendons. Sensation might or might not be disturbed, but usually marked anæsthesia in some form was present. Although it was often profound, and frequently changed its position, it never corresponded to the anatomical distribution of the paralysis, which varied from slight motor weakness to absolute loss of power. Within recent years some special signs had been noted of great diagnostic value to practitioners. Besides several local palsies the types usually encountered were monoplegia, hemiplegia, and paraplegia; diplegia and quadriplegia were so rarely seen that they did not require attention. Much importance was attached to the study of the reflexes, especially the plantar response, gait, pupillary and electrical reactions, together with the use of the ophthalmoscope. Of the local palsies hysterical aphonia due to paralysis of the adductors, in the eye concentric contraction of the visual fields, and in the ocular region pseudo-ptosis from spasm of the orbicular muscle were the most common. Some of the functional palsies were comparatively easy to recognise, but others were problems of great difficulty.—Mr. N. Bishop Harman, Dr. Alastair MacGregor, Dr. A. Ogier Ward, Mr. O. L. Addison, and others took part in the subsequent discussion, to which Dr. Palmer replied.

Reviews and Notices of Books.

Œdema and Nephritis: A Critical, Experimental, and Clinical Study of the Physiology and Pathology of Water Absorption in the Living Organism.

By MARTIN H. FISCHER, M.D., Eichberg Professor of Physiology in the University of Cincinnati. Second edition, revised and enlarged. With 160 figures. London: Chapman and Hall; New York: J. Wiley and Sons. 1915. Pp. x.-696. Price 21*s.* net.

DURING the last eight years Dr. Fischer has written extensively on the subjects treated of in this volume, which is an elaboration of the two volumes on "Œdema" and on "Nephritis" that formed its first edition. To sum up its contents in a single phrase, it may be described as an apotheosis of colloid chemistry in explaining the physiology and pathology of living matter.

So far as œdema is concerned, and the transfer of fluids and dissolved substances into and out of the cells of living matter, Dr. Fischer criticises very severely the "osmotic theory," which attempts to explain the observed phenomena by appealing to differences in the osmotic pressures exerted by the contents of the cells and by their surroundings. He similarly criticises the "lipoid membrane theory," which endeavours to help out the osmotic theory by assuming that there is a lipoid skin outside each cell to act as a semi-permeable membrane, and to regulate the direction and intensity of the osmosis. In the place of these theories he gives us (1) "the laws of equilibrium" between the contents of the cell and the medium surrounding it (p. 171), these "laws" being influenced by (2) solubility characteristics, (3) phenomena of adsorption, and (4) chemical combination. Armed with these weapons, he finds no difficulty in explaining processes such as the secretion of urine by the kidney, or the excretion of acid gastric juice from the practically neutral blood. The chemistry and physics of colloid solutions and suspensions have made great progress during the present century, and so has the study of the phenomena of adsorption. But surely Dr. Fischer is going rather far when he asks us to believe that the excretion of urine is satisfactorily explained on the following lines (p. 326): "When now we recall the physico-chemical fact that when any dissolved substance is offered simultaneously a liquid colloid, a solid colloid, and water (as is the case in the kidney), an *unequal* distribution of the dissolved substance between the three phases is the *rule*, then we will have no difficulty in understanding why a difference in quantitative composition between the blood, kidney tissue, and urine, so far as dissolved substances are concerned, is also the rule. *Wherefore a 'selective' secretion is to be expected rather than to be wondered at.*" No better instance of an explanation of an *ignotum per ignotius* could be looked for; for what do we know, apart from guess-work, of the physics and chemistry of that incredibly complex fluid, the circulating blood, and what do we know of the physics and chemistry of the living cells that secrete urine in the kidney? How can it be legitimate to describe the blood simply as "a liquid colloid" and the renal cells as "a solid colloid," and further to describe both the blood and the urine as "water"? Given such variables and unknowns as the blood, the renal cells, and the colloids of the body with their variable capacities for attracting water, it is quite easy to speculate on the ways in which urinary secretion and œdema might be produced, without considering the influence that must be exerted by the osmotic pressures of the various crystalloids and colloids entering into the composition of the fluids and cells concerned. But speculations as to the *modus operandi* of these complex processes, valuable though they may be as analogies, can have little finality so long as our knowledge of the special colloids concerned and of the laws of adsorption and colloid chemistry remains as fragmentary as it is at the present time.

In his anxiety to make out a case for the colloids of the body Dr. Fischer appears at times to be in danger of neglecting the crystalloids with which they are inextricably bound up. In speaking of the "variable capacity of the body colloids for holding water," he leaves the reader in some little doubt as to the way in which this water is held. Dr. Fischer compares it to the avidity of fibrin, gelatin, catgut, or the protein of dialysed blood serum for water, and quotes a number of interesting experiments to exhibit the influence of acids, alkalies, and other substances on this avidity. Yet the reader cannot but remember that none of these experimental materials exist in the human body during life, and so may hesitate to agree with Dr. Fischer that "the absorption of water by muscle is determined in the main by the state of the colloids contained in it" (p. 126). Argument by analogy is not a very sound method nor very convincing when the questions at issue are so many and so complex.

Regarding œdema as "a problem in colloid-chemistry" on the lines indicated above, Dr. Fischer will have nothing to do with explanations of it based on "increased permeability of the blood-vessel walls," "decreased ability to hold back water," "increased imbibition," or "variations in blood- or lymph-pressure," time-honoured phrases of an older day. He then quotes (p. 178) a simple experiment which proves clearly that œdema may be due to the tissues' "decreased ability to hold back water," or to their "increased imbibition"; but, oddly enough, he only draws a most illogical conclusion from the experiment himself—namely, that as the vessels of a limb that developed œdema had been tied, circulation-pressures cannot be one of the determining causes of œdema. He gives reasons for believing that an accumulation of acids in the tissues is the most potent factor in the production of œdema, and that this over-production or over-accumulation of acids is often due to a lack of oxygen in the tissues.

About 250 pages of the volume are given to the subject of nephritis. Dr. Fischer recognises only one kind of nephritis—namely, parenchymatous nephritis; but this, he says, may affect either the whole kidney or only spots in it. Speaking generally, he sets nephritis down to the abnormal production or accumulation of acid and of substances which in their action upon colloids behave like acid in the cells of the kidney. Pathologists who are not satisfied with any of the many classifications of the varieties of nephritis should welcome such simplicist conceptions as these. They lead Dr. Fischer to interesting conclusions as to the treatment of chronic nephritis. He supports the use of the "lacto-vegetarian" diet so long advocated by the French, his formula being "give alkali, salts, water, and dextrose"; without making drastic restrictions in the dietary he would cut down the acid-producing proteins of the food. Plenty of water should be given; Dr. Fischer believes that the primary function of the kidney is to excrete water, and that "the secretion of all dissolved substances is secondary to this." He has a number of observations to make on methods of estimating clinically the acidity of the urine, and the deductions that may fairly be drawn from the acidities found, that should be of interest to clinicians. Using methyl red (0·2 gramme in 100 c.c. alcohol) as an indicator, he says: "I cannot recall a single patient in whom it was difficult or impossible to hold the urinary acidity below that of the turning point of methyl red who did not die." At the end of the volume he gives a discussion of glaucoma considered as one of the local œdemas; he sets it down to the production or accumulation of acids or similar substances in the eye.

The book is long, and the contentious matter with which it is filled is so abundant that it is hard for a reviewer to do full justice to it in a brief compass. Dr. Fischer writes very clearly and has arranged his matter excellently. He often gives the impression that he underestimates the strength of the position of his adversaries—the believers in the importance of osmosis, for example, or of cell membranes, or of the distinction between living and dead tissues, in the metabolic processes of the living body. He has undoubtedly done good service by drawing attention to the importance of the hydration and dehydration of the colloids of the body, and the necessity for the study of colloid chemistry by those who would understand the why and wherefore of vital processes. But perusal of his pages leads to the feeling that the phrase "colloid chemistry" is but an ample cloak for our ignorance of the physico-chemical processes of living cells, and that as an explanation it takes us no further than, for example, an explanation of bacterial agglutination based on such an obscurity as Helmholtz's theory of double electric envelopes. Dr. Fischer is an enthusiast with a far-reaching theory to push, and so it is perhaps not unnatural to find his views one-sided wherever that theory is concerned. His volume makes stimulating and even provocative reading; it may be warmly recommended to all physiologists and medical men who are interested in the main subjects with which it deals—namely, œdema, nephritis, and glaucoma.

The Heart in Early Life.

By G. A. SUTHERLAND, M.D. Edin., F.R.C.P. Lond., Senior Physician to the Hampstead and North-West London Hospital; Physician to Paddington Green Children's Hospital. London: Henry Frowde and Hodder and Stoughton. 1914. Pp. 211. Price 6*s.*

THIS work deals with a subject which receives but little attention in the ordinary text-books, but which is of the greatest importance in determining a child's future course of life. The heart in childhood and youth, as in adult life, is subject both to organic disease and functional derangement, but the former is more generally understood than the latter. The differentiation between the two may be difficult, but it must be determined as far as possible. For a child's whole life may be unnecessarily hampered and its development stunted if functional disturbance is mistaken for organic mischief. There is a close similarity between the cardiac signs and symptoms of the two conditions, and the whole aspect of each case has to be carefully studied. As Dr. Sutherland points out, the period of childhood and youth has its own peculiarities and problems; there is an instability about the cardiac action which is not present in the fully developed adult heart. This instability would appear to be both in the nervous mechanism—central and peripheral—which controls the heart and in the heart itself. In early life the cardiac action is much more easily disturbed because the cardiac apparatus is not yet fully developed, hence a large number of what may be called developmental disorders and disturbances are met with.

A full description is given of the various forms of functional cardiac irregularity in the young, the cardio-respiratory form being especially considered. The diagnosis and prognosis of these irregularities are discussed at length, and this section will well repay careful study. It is rightly pointed out that if the cardiac disturbance is proved not to be of organic origin the important conclusion follows that no treatment directed to the heart is required. The patient's surroundings and mode of life must be carefully considered, and a search must be made for any source of infection or any disease in other parts of the body, particularly gastro-intestinal disorders. We agree that the majority of these disturbances are to be traced to a disordered state of the nerves, and will not be removed except by treatment directed to building up a healthy nervous system.

Organic disease of the heart in early life is also well described, and much information likely to prove of value in actual practice is given. The importance of preventive treatment is emphasised. In the case of an acute attack of rheumatic fever the possibility of carditis must always be kept in mind, and support will be given to Dr. Sutherland's contention that to prevent this complication the salicylate treatment should be thoroughly carried out, while rest during the convalescent stage should be sufficiently prolonged.

We cordially recommend this volume to those engaged in general practice who are likely to be brought into contact with a large number of the diseases—major and minor—of childhood.

Occupational Diseases of the Skin: a Brief Account of the Trade Processes and Agents which give rise to them.

By R. PROSSER WHITE, M.D. Edin., M.R.C.S., Senior Physician and Dermatologist, Royal Albert Edward Infirmary, Wigan, &c. London: H. K. Lewis. 1915. Pp. 165. Price 7*s.* 6*d.* net.

THE more widely our knowledge of the diseases of the skin extends the more do we appreciate that many of the dermatological lesions which we have to treat arise from the external influence of chemical substances and other agents with which the skin is brought into contact; and the multiplicity of modern trades has increased greatly the number of the harmful substances which are able to give rise to diseases of the skin. Up to the present no work has been specially devoted to this subject, and we therefore welcome the appearance of this book, for it will enable many practitioners to identify the causative agent of a doubtful lesion of the skin. The passing of the Employers' Liability Act has also made the matter of more importance.

While the value of the book is great in itself, it has been materially enhanced by the inclusion of a very large number of references to the original papers from which the facts included have been taken, and great credit is due to Miss A. Newbold, who has been responsible for most of these references, especially those which have been taken from foreign works and journals.

This book should have a wide circulation, as it deals with a subject which concerns all medical men who have to treat or to examine workmen.

Medical Applied Anatomy for Students and Practitioners.

By T. B. JOHNSTON, M.B., Ch.B. Edin., Lecturer on Anatomy, University College, London. With three full-page plates in colour and 146 other illustrations in the text. Edinburgh Medical Series. London: A. and C. Black. 1915. Pp. 436. Price 7*s.* 6*d.* net.

IF the question were asked what sort of book upon human anatomy could be written at the present day to fill any real gap in our already long series of text-books, an answer could easily be given: there is need for a medical applied anatomy. The ideal book is to be for the physician what so many existing surgical anatomies are for the surgeon. It is easy to name several works upon surgical anatomy, every one of which is good; but medical anatomies are few, and to recommend any treatise as a text-book which should guide the physician would be matter of considerable difficulty. To judge by the attempts that have been made, the writing of such a book is no easy matter.

It is to be doubted if even now Dr. Johnston has produced the exact book we have in mind; but it is certain he has written a very good one. The writing is clear and careful, and the accounts of anatomical conditions are for the most part excellent. The author has used judgment in assigning definite anatomical explanations for clinical phenomena, and very few criticisms could be made with any justice; it should be pointed out, however, that the commonest anatomical basis of epistaxis is as a rule very beautifully revealed to the anatomist's inspection, and that it is not a communication between nasal veins and superior longitudinal sinus *viâ* the foramen cæcum.

We think that a book so good as this should be more fittingly illustrated; the beautiful drawings of Leveillé make but poor blocks when handled by modern processes; and Sir William Turner's illustrations, which were excellent 40 years ago, could be improved upon to-day. It is doubtful if surface markings are best shown upon the cast of a classic figure, and the author's purely diagrammatic work is not always satisfying (see especially Fig. 123).

It would be a pleasure to welcome a subsequent edition of this work illustrated by a new and uniform series of anatomical drawings and diagrams.

LIBRARY TABLE.

Field Hospital and Flying Column. By VIOLETTA THURSTAN. London and New York: G. P. Putnam's Sons. 1915. Pp. 184. Price 2*s.* 6*d.* net.—The Field Hospital was in Belgium and the Flying Column in Russian Poland. Miss Thurstan was sent out by the St. John Ambulance Association in charge of a party of nurses to serve under the Belgian Red Cross. They worked at first in Brussels and in Charleroi and the neighbourhood, where they saw many examples of German "frightfulness," Charleroi being entirely burned down by means of an organised system of incendiarism. Then they returned to Brussels, whence after a little they were expelled by the Germans, being conducted as prisoners to Denmark. Miss Thurstan gives a vivid account of the hospital work in Belgium, where the detachment seems to have done admirable work under great drawbacks, but patients, doctors, and nurses worked with such a spirit that most difficulties were surmounted. The journey through Germany *viâ* Verviers, Cologne, Münster, and Kiel to the Danish frontier was made singularly unpleasant, but the party were fortunate in meeting one German officer who behaved as a gentleman and a soldier who looked after them at Hamburg. After a short stay in Copenhagen Miss Thurstan and three of her nurses volunteered for service in Russia, which service was gladly accepted. Here the Flying Column work began in Warsaw; later on the column moved to Lodz, round which there was severe fighting and terrible suffering uncomplainingly borne by the wounded. Lodz eventually had to be evacuated and 18,000 wounded were safely moved out in four days. Miss Thurstan ended her labours in the trenches at Radzivilow, where she was nearly killed by a bomb from a Taube, which exploded close to her. However, she escaped with only a slight wound in the leg. In addition to this she contracted pleurisy and was sent to Petrograd to recruit, and there this unpretending and very interesting little book was written.

Medicine (Catechism Series), Part II., second edition, pp. 180. *Operative Surgery* (Catechism Series), Part II., first edition, pp. 144. *Botany* (Catechism Series), Parts I. and II., second edition, pp. 80 and 152. Edinburgh: E. and S. Livingstone. Price 1s. each.—We reviewed *Medicine*, Part I. (second edition of this series), in THE LANCET of Feb. 7th, 1914, p. 394. Part II., now before us, deals with disorders of nutrition, chronic intoxications and sunstroke, diseases of the kidneys, and diseases of the blood and ductless glands. Like the former volume, this also appears to be well condensed and kept fairly up to date by its modestly anonymous author.—*Operative Surgery*, Part II., is another useful condensation. It deals with amputations and other operations on the extremities, and operative treatment of fractures and in the head and neck, with nerve operations, trephining, and operations on the cranium, lips, mouth, and pharynx, the neck, and the thyroid body.—*Botany*, Part I., deals with general classification, the anatomy of plants, with insectivorous plants, and with the natural orders. Part II. with the physiology and histology of plants, and includes the life-history of ferns, mosses, and an account of bacteria and fungi. For the purposes of revision and for writing up class notes such books as these serve a very useful purpose. As we have repeatedly remarked, such books are of value only when used to marshal and review knowledge already gained. If used in place of larger works they are pernicious.

Towards Racial Health: A Handbook for Parents, Teachers, and Social Workers on the Training of Boys and Girls. By NORAH H. MARCH, B.Sc., M.R.San.I. With a foreword by J. ARTHUR THOMSON, M.A., LL.D. Illustrated. London: George Routledge and Sons, Limited. 1915. Pp. 326. Price 3*s.* 6*d.* net.—The title of this very excellent little book, which no doubt Miss March has selected after due deliberation, is hardly calculated to convey an adequate idea of its scope and objects.

One of the greatest difficulties which confront parents and teachers is that of conveying to their children or pupils just that amount of knowledge in relationship to sex which is necessary for their spiritual and physical salvation. Too much knowledge, especially if given at the wrong time and in the wrong way, may do incalculable harm, whereas innocent ignorance may equally well be responsible for the most fatal results. In the very briefest, as also in the clearest, possible way Miss March explains on social, ethical, psychic, and physical grounds why this side of education should not be neglected; and not only does she explain why, but, what is far more important, she shows how instruction of this kind should be given to children and adolescents of all ages. It has been pointed out by Stanley Hall that children begin to ask troublesome questions at a very early age, between 3½ and 8 years. Miss March shows how these questions may be answered in such a way that there is nothing left to undo later. She also gives full details of a most admirable course of nature study designed to lead the child by gradual stages to a full knowledge of the significance of sex and sexual reproduction. Beginning with the fertilisation of the tulip, the poppy, and the daffodil, the child is led by almost imperceptible stages to the study of reproduction in earthworms, water snails, land snails, slugs, and other simple hermaphrodite animals. Then to the study of the same processes in the spider, the moth, and the butterfly, and finally, in vertebrate animals such as the frog, the lizard, and the chick. In a valuable appendix Miss March explains the practical details of keeping these didactic animals in appropriate incubators, aquaria, or vivaria. A difficult subject is approached in a delicate and sympathetic manner. It is hard to imagine that the most sensitive feeling can be shocked or hurt by any word expressed or idea suggested in any line of this book. It is written from start to finish in a most reverent spirit, reverent not only of the great biological principles which are unfolded throughout its pages, but also of the spiritual ties which unite parent to children and teacher to pupil. Professor Thomson has contributed a delightful preface in which he testifies to the correctness of the biological facts referred to; on the soundness from a medical and physiological standpoint of the many references to general and personal hygiene we offer Miss March our congratulations.

The Dietetic Treatment of Diabetes. By B. D. BASU, Major, I.M.S., retired. Fifth edition. Allahabad: Panini Office. 1915. Pp. 90. Price Rs1.8., or 2s. —This is a revised and enlarged edition of the little work noticed in these columns last year. The author advises the restriction, or withdrawal, of meat, alcohol, tea, coffee, and "cocoa" (i.e., cacao), and recommends milk, the leguminous meal *besan*, and "cocoanut" (by which he means "coco").

KING EDWARD VII. SANATORIUM, MIDHURST.—The Insurance Commissioners have now arranged for the removal of the non-commissioned officers and men, for whom beds have been reserved by the War Office in the King Edward VII. Sanatorium, to institutions corresponding to the localities in which the patients propose to reside. As a result the sanatorium has, from June 1st, reverted to its original purpose of receiving both male and female patients suffering from pulmonary tuberculosis who belong to the educated classes, whether in professional or kindred employments, but whose means are limited, and the sanatorium has been reconstituted for this purpose from June 1st.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

WEDNESDAY, JUNE 2ND.

THE Council resumed its sittings at its offices, 299, Oxford-street, W. Sir DONALD MACALISTER, the President, was in the chair.

Penal Cases.

The Council heard charges against medical practitioners.

The first case to be considered was that of Alexander Orford Schorn, registered as of Sacriston, Durham, M.B., C.M. 1892, U.Edin., who had been summoned to appear before the Council on the following charge:—"That being a registered medical practitioner you abused your position by committing adultery with a Mrs. Collins, whom you had been attending professionally, of which adultery you were found guilty by the decree of the Probate, Divorce, and Admiralty Division (Divorce) of the High Court of Justice, dated June 29th, 1914, and made absolute on Jan. 25th, 1915, in the case of Collins *v.* Collins and Schorn, in which you were the co-respondent. And that in relation thereto you have been guilty of infamous conduct in a professional respect."

There was no complainant in this case.

Dr. Schorn attended in person.

Mr. C. HARPER, the solicitor to the Council, brought to its notice the decree of the Probate, Divorce, and Admiralty Division, and certain circumstances connected with the proceedings there.

Dr. SCHORN stated, on his own behalf, that in his view he had not been fairly treated in the judicial proceedings. He denied that he had committed adultery.

The PRESIDENT said: Mr. Schorn, I have to inform you that the Council has judged you to have been guilty of infamous conduct in a professional respect, and have directed the Registrar to erase your name from the Medical Register.

The next case to be considered was that of Alfred Bertie Kramer, registered as of King's Cliffe, Wansford, Northants, M.R.C.S. Eng. 1911, L.R.C.P. Lond. 1911, who had been summoned to appear before the Council on the following charge: "That being a registered medical practitioner you have systematically canvassed for patients by visits made personally and by a Mrs. Saunt on your behalf to persons in the village of Bulwick, Northamptonshire, who were patients of Mr. Arthur Samuel Stokes. And that in relation thereto you have been guilty of infamous conduct in a professional respect."

The complainant was Mr. Arthur Samuel Stokes, M.R.C.S. Eng. 1881, L.R.C.P. Edin. 1882, of Weldon, Kettering.

Mr. Kramer attended and was represented by Mr. J. Batten, solicitor.

Mr. Stokes was represented by Mr. J. J. Parker, solicitor.

Mr. PARKER, in opening the case on behalf of the complainant, said that he wanted to allege that Mr. Kramer himself canvassed for panel patients, and he sanctioned the canvassing by Mrs. Saunt. He further alleged that Mr. Kramer obtained the medical cards of these persons, and instead of getting the people to sign it would seem that he signed them himself.

The PRESIDENT: These are insurance cards given to patients to fill in with the name of the doctors whom they chose.

Mr. PARKER: Yes. They were not filled in by the patients in this case. He had witnesses who would say that they had not so filled in their cards. The lady referred to in the course of the charge he would submit canvassed patients in Bulwick. In her declaration she said that she was not asked to do so by Mr. Kramer. Some statements were made to the effect that Mr. Stokes was not carrying on these panel patients in Bulwick. There was not a word of truth in these statements. Mr. Stokes had never said anything about it to anyone. It was pure invention. He (Mr. Parker) put in certain insurance cards which, he said, had been filled in by some persons other than the panel patients themselves. The Council would be able, he said, to examine the handwriting for themselves.

Mr. ARTHUR SAMUEL STOKES, M.R.C.S., L.R.C.P., of Weldon, then gave evidence to the effect that formerly he had 30 club patients at Bulwick, who formed the great majority of the club patients in the place. These club patients became his panel patients after the National Insurance Act came into force. Mr. Kramer started a surgery at Bulwick. He learned that his panel patients at Bulwick, all except four, had transferred to Mr. Kramer. It was not true that he had stated that he did not wish to go to these Bulwick patients. He had made inquiries as to what had been transpiring, and as a result he brought this complaint.

Several witnesses gave evidence on behalf of the complainant.

JAMES BARRATT (Bulwick) stated that Mr. Kramer had come to him and said, "I heard you were going to change doctors." He had replied that Mr. Stokes had been his doctor for many years. Then Mr. Kramer asked for his medical card and also that of his brother. He (Mr. Kramer) took the cards away with him. He afterwards found that he was transferred to Mr. Kramer's list. He had no fault to find with Mr. Stokes.

FREDERICK DOLBY (Bulwick) stated that Mrs. Saunt had asked him to join Mr. Kramer's panel. He was quite satisfied with Mr. Stokes, and he had not applied for transfer to Mr. Kramer.

Cross-examined by Mr. BATTEN, WITNESS said that he had never made any application for the medical card, but he had received it by post.

ALFRED LANE stated that in December last Mr. Kramer came to him and asked for his medical card. He said that he wanted it to be sent in, because it ought to be in next day. Witness gave him the card. He signed nothing. The medical card came to him through the post. When it came it had Mr. Kramer's signature upon it. He found that he had been transferred to Mr. Kramer. He was surprised. He wished to remain with Mr. Stokes. He was transferred back again to Mr. Stokes.

The Council sat *in camerâ* in order that it might consider a matter in connexion with the case.

The Council adjourned.

THURSDAY, JUNE 3RD.

Penal Case.

The Council resumed consideration of the case of Alfred Bertie Kramer.

The case for the complainant was continued.

Mr. FREDERICK THOMAS FISHER, M.R.C.S., L.R.C.P., was called as a witness on behalf of the complainant. He said that he had been in negotiation for the purchase of the practice at King's Cliffe belonging to Mr. Kramer. He had arranged to visit the practice on July 1st. He had had his suspicions aroused. He had heard things which he did not like, and he had made up his mind to break off the negotiations.

Mr. BATTEN (cross-examining): There was no intention of selling you the practice until after this inquiry?

Mr. FISHER: I did not know this inquiry was going on until this morning.

Mr. BATTEN: The negotiations with you were suspended. There was no attempt by Mr. Kramer to get you to complete the purchase.

Mr. FISHER: Yes. I saw his lawyer yesterday and he told me that the provisional agreement I had signed was binding and the practice was sold to me, but I refused to take it up.

Mr. BATTEN: Where did you see his lawyer?

Mr. FISHER: At Stamford.

Mr. BATTEN (addressing the President): That puts me in rather a difficulty. I should like to consider my position.

The PRESIDENT: Do you ask the Council that you should retire?

Mr. BATTEN: I would like a minute to speak to my client. I do not want to place him at a disadvantage.

The PRESIDENT: You may do so.

Mr. Batten and Mr. Kramer retired from the Council chamber.

Mr. BATTEN (returning shortly afterwards) said: Mr. Kramer appears to have fainted, and I wonder whether the Council could do any other business in the meantime and allow this matter to be suspended for a few minutes.

The PRESIDENT: Certainly.

The Council proceeded to deal with other business reported later. After certain reports had been received Mr. Batten returned.

Mr. BATTEN said that he understood from all appearance that Mr. Kramer would not be able to do anything in his case that day. He (Mr. Batten) was unable to do it for him.

The PRESIDENT: Do I understand you withdraw from his representation?

Mr. BATTEN: I do withdraw, but I feel he is not able to conduct his own defence to-day.

The PRESIDENT: You do not propose to act for him further.

Mr. BATTEN: No, sir, I do not.

The PRESIDENT said that an official of the National Insurance Commission was in attendance to inform the Council what was the normal procedure in sending in the transfers of panel patients who desired to change from the list of one medical man to that of another. He would give this information as a friend of the court and not as the witness of either party. He would ask Mr. Batten to remain in the room in the interests of his late client in order to communicate to him the decision of the Council as to any adjournment.

Mr. BATTEN assented.

Mr. JAMES RAE, an official of the National Insurance Commissioners (England), described the procedure by which panel patients could transfer by consent from one medical man to another at any time. Otherwise panel patients could only transfer at the end of the year. A panel patient who desired thus to change his medical man must give notice to the Insurance Committee before Dec. 1st. The notice could be on a half sheet of notepaper, but no notice could be accepted unless it purported to be in the name of the patient himself. With that notice had to be sent the medical card bearing the name of the old doctor.

The PRESIDENT: Does the person have a new card every year?

Mr. RAE: No. Only a new card in the case of transfer from one medical man to another. When the Insurance Committee received the notice they stamped the old card "Not available after December 31st," thus cancelling it after the end of the year. The committee prepared a new card and inserted the insured person's name and address on the outside of the card, and stamped it "Not available for treatment until January 1st." The new card was then sent to the insured person. There was no doctor's name on it when it was sent. The insured person then filled up the card and put in the name of the new doctor. The doctor if he wished to accept the insured person signed his name in the proper place. The card was returned by the doctor to the Insurance Committee so that it might put the patient's name on the doctor's list.

The PRESIDENT: What happens when a person who is insured cannot write or sign his own name?

Mr. RAE: I have seen cards where such persons have made a mark or a cross—something to identify the information as coming from them.

The PRESIDENT: Is there any practice by which bundles of these insurance cards in blank can be supplied to any person?

Mr. RAE: It is not conceivable. These cards were invariably sent direct to the insured person. The insured person should sign the card at the two places where it was indicated he should sign.

The PRESIDENT: The card filled up should contain twice the signature of the insured person and once that of the doctor.

Mr. RAE: Yes.

Mr. FISHER gave further particulars about the negotiations for the acquisition of Mr. Kramer's practice for which a sum of £750 was asked. He refused to complete the purchase.

The further hearing of the case was adjourned.

Appointment of Committees.

The following committees were appointed :—

Education Committee: Dr. Norman Moore, Sir G. Philipson, and Sir Francis Champneys (nominated by the English Branch Council); Dr. Mackay, Mr. Hodsdon, and Dr. Knox (nominated by the Scottish Branch Council); and Sir Arthur Chance, Sir William Whitla, and Dr. Little (nominated by the Irish Branch Council).

Examination Committee: Dr. Taylor, Dr. Saundby, and Dr. Caton (nominated by the English Branch Council); Sir Thomas Fraser, Dr. Russell, and Dr. Knox (nominated by the Scottish Branch Council); and Sir John Moore, Sir Charles Ball, and Dr. Kidd (nominated by the Irish Branch Council).

Public Health Committee: Dr. Newsholme, Dr. Latimer, and Mr. Verrall (nominated by the English Branch Council); Dr. Norman Walker, Dr. Cash, and Dr. McVail (nominated by the Scottish Branch Council); and Sir John Moore, Dr. Magennis, and Dr. Kidd (nominated by the Irish Branch Council).

Coördination of School Examinations in England.

A report was submitted from the Education Committee upon the recognition of certain preliminary examinations. That report stated that a communication on the subject of the examination of schools from the Board of Education had been remitted for consideration by the Education Committee of the Council. The Education Committee recommended that the Council should in reply report to the Board of Education as follows: "The General Medical Council cordially welcomes the proposed foundation by the Board of Education of a central authority to be charged with the supervision and coördination of school examinations in England, and the establishment of a system of leaving certificates. In taking this step the Council will, in fact, be reaffirming its resolutions on the subject of Nov. 26th, 1904. With reference to the recognition of the proposed examinations for the purpose of admission to the register of medical and dental students, the Council reports that the standard of the second examination, as contemplated, would appear to be satisfactory; and that that of the first, which the Council is informed is to be approximately that of the senior local examinations of the University of Oxford, would be accepted under the present regulations, provided in both instances that the several subjects required by the Council are included in the examination. These are Latin, English, mathematics, and one of the following: Greek or a modern language. This proviso would necessitate in the syllabus of the second examination, as at present planned, the inclusion of more than one 'subsidiary subject.' When the detailed arrangements have been completed the Council will be glad to receive further particulars from the Board of Education."

Dr. MACKAY moved that the Council should approve of the reply recommended to be sent to the Board of Education. He said that it would be remembered by most of the members of the Council that in 1903 and 1904 the Council had under consideration a suggestion from the Board of Education in England that steps should be taken to make uniform a large number of examinations which existed to qualify for admission to the universities and the learned professions. The Council consulted the Board of Education, which agreed in a general way to the proposals then put forward. The matter had taken a very considerable time to carry through, but the Education Committee was very glad to see that the Board of Education had at length been able to take a very definite step and to put forward agreed proposals which were now almost ripe for adoption. The Education Committee thought it highly important that the Council should again emphasise its support to the Board of Education in this most laudable step. The last paragraph of the proposed reply to the Board referred to matters which were not absolutely settled, and expressed an opinion which perhaps might lead to further discussion later.

Dr. NORMAN MOORE seconded the motion.

Sir BERTRAM WINDLE emphasised the importance of the subject. The multiplicity of examinations had previously given the Council a great deal of trouble. He only wished that there was a similar prospect of obtaining in Ireland what was now being proposed for England. If the proposal could be carried out it would be very greatly to the advantage of education generally, and to no profession would it be of more importance than to the medical. He cordially supported Dr. Mackay's motion.

The PRESIDENT remarked that it was not mentioned in the report, but it was a matter of common knowledge that the coöperation of the universities in England had been engaged in the matter, so that if it came to fruition it would be the result of the national effort on the part of all concerned. The motion before the Council amounted to this, that it should give its general support to the proposal as it did ten years ago, and ask that details should be submitted to it.

The motion was agreed to.

Pharmacists and the Medical Curriculum.

The report of the Education Committee also dealt with the question of pharmacists and the medical curriculum. That report went on to say:—"A request has been put forward by the Pharmaceutical Society of Great Britain for the recognition, for the purpose of admission to the Students Register, of the certificates attesting the preliminary examination of qualified pharmacists desirous of attaining a Licence in Medicine; and, further, for the recognition in the medical curriculum of the classes taken and the examinations in medical subjects passed by qualified pharmacists in their special course of instruction. These proposals are made in view of the present 'shortage of medical men and the possible emphasis of that shortage in the near future.' The committee would point out that the society has no preliminary examination of its own, and that among the examinations which it recognises there are many which are not accepted by the Council, on the ground that their standard is not sufficiently high. The professional course embraces botany, physics and chemistry, and materia medica and pharmacy. These subjects are studied chiefly from the point of view of their practical application to pharmacy, and the examinations appear to be amply sufficient for that purpose. The question is one which does not seem to call for any action on the part of the Council, as machinery already exists in the Students' Registration Committee under which candidates whose preliminary examination is in any respect incomplete may have *pro tanto* recognition extended to those portions which are satisfactory. So far as the recognition of the professional course is concerned, the matter is primarily one for the consideration of the licensing bodies, who have power to recognise any courses of study and examinations other than the final or qualifying examination, which in their opinion is equivalent to the course of study and examinations prescribed for the medical curriculum."

On the motion of Dr. MACKAY, seconded by Dr. NORMAN MOORE, the Council expressed its approval of the terms of the report.

Public Health Committee.

Sir JOHN MOORE intimated that no formal report would be presented by the Public Health Committee. He, however, had been requested to inform the Council that the Registrar had been asked to draw up statistics relating to passes and rejections amongst candidates for Diplomas in Public Health for the last ten years. That statistical information had been drawn up.

Indian Subordinate Medical Department.

A report was received from the Examination Committee, together with the chairman of the Education Committee and the chairman of the Students' Registration Committee, on (1) Indian Subordinate Medical Department, preliminary examinations in general knowledge and course of study; and (2) the form of the certificates to be granted to Indian graduates and students seeking admission to the Students Register of the United Kingdom. Mr. C. E. Mallett, the secretary for Indian students, wrote on March 31st that "since Nov. 11th last fresh regulations have been sanctioned by the Government of India, with the approval of the Secretary of State, for the recruitment of military assistant-surgeons of the Indian Subordinate Medical Department. The intention of the changes was to raise the preliminary educational standard for candidates for admission to the service to that required by the General Medical Council, and to extend the course of study to five years."

It was stated in the report of the Examination Committee that: "With regard to the recognition and subsequent training of members of the Indian Subordinate Medical Service applying for admission to the Students Register and seeking to proceed to licence in this country the Council in 1912 made the following recommendations to the licensing bodies: That no certificates should be accepted from the candidates except those embodied in the special forms prepared by the India Office; that a preliminary examination in general education recognised by the General Medical Council should be required; that no one of the three professional examinations of the Indian Subordinate Medical Service should be accepted; and that two years of actual study, in addition to the four years' course pursued in India, and embracing the subjects of pathology, pharmacology and therapeutics, medicine, surgery, midwifery, vaccination, hygiene, mental diseases, and anæsthetics should be required antecedent to qualification. The attestation certificate forms which were drawn up in 1912 were found by the Indian Government to be in some degree unsuitable, and were modified in 1914. The second of two communications from the India Office now under consideration intimates the approval of the new forms by the Indian Government in all respects save one, and that of a purely technical character. It had been provided originally that the attestation forms dealing with the preliminary examinations in general knowledge should be signed in all cases by a university official. The Indian Government now suggests that in the case of the preliminary examination of the United Provinces (India) Education Department the certificates should bear the signature of the secretary of the examining board. The proposal is one which solely concerns the local management, and the Council will have no hesitation in agreeing to it. In the first of the two communications the Council is informed that the course of professional study for the Indian Subordinate Medical Service will be extended in the future from four to five years, and that prior to its commencement candidates will be required to pass a preliminary examination recognised by the General Medical Council. With regard to the course of study the lengthening of the curriculum will necessitate a reconsideration on the part of the Council of the recommendations issued to the licensing bodies in 1912 dealing with the extent of the recognition to be extended to it in this country, and to this end the Council is advised by the committee to request from the India Office full particulars of the new conditions, including the subjects of study, the time devoted to each, the nature of the examinations, and the character of the teaching. In view of the intimation that the Indian authorities will in future require from the candidates a preliminary examination in general knowledge recognised by the Medical Council, the committee recommend that the 'regulations in regard to the registration of students' as published yearly by the Council be regularly transmitted to the India Office. In the present circumstances, as the older regulations were to some extent modified last year, the report of the Education Committee upon Indian examinations as adopted by the Council in June, 1914, should also be transmitted. Under the new conditions the actual 'preliminary examinations' at present conducted in India are accepted by the Council as marking the date of the commencement of the curriculum and establishing full recognition to the courses of study in chemistry, physics, and biology, but they do not of themselves entitle to admission to the Students' Register in this country, and for that end must be supplemented in each case by an additional examination specified in the list printed by the Council. The committee recommend that this report be adopted and transmitted to the India Office."

Dr. MACKAY, in moving the adoption of the committee's recommendation, said that the subject of the Subordinate Medical Service in India had been before the Council on several occasions. On the last occasion the Council took the step of saying that certificates brought by Indian students who sought recognition as students in this country should be on uniform forms which had been drawn up and approved by the Indian Government. The forms as first drawn up were not quite satisfactory, but they were altered as the report showed. The next matter with which the report dealt was of more importance. The Council would remember that with regard to subordinate medical officers, the preliminary examination was not necessarily one accepted by the Council and the course of study was a modified one extending only to four years. The Indian Government had now intimated that they proposed to change this arrangement. Under the new circumstances candidates for subordinate medical posts would be required to pass a preliminary examination accepted by the General Medical Council and also to undergo a five years' course. In these circumstances it was necessary that the Council should modify its recommendations to the licensing bodies as to the amount of recognition of the Indian course for students who came to this country. One part of the report, it would be observed, asked for details of the new five years' course. If the Council adopted the report it would get the information from the India Office in order to enable it to take effective action.

Sir JOHN MOORE seconded, and the motion was agreed to.

The Apothecaries' Hall of Ireland.

Three reports were submitted by the Examination Committee in regard to the Apothecaries' Hall of Ireland—viz., (1) report on tables furnished by the Apothecaries' Hall of Ireland in regard to examinations held in October, 1914, and February, 1915; (2) report on the tables showing the results of examinations held in June, July, and August, 1914, by the Apothecaries' Hall of Ireland, together with the reports of the assistant examiners thereon, the reply of the Apothecaries' Hall of Ireland to the committee's report, and the report of the committee on the reply; and (3) summary of particulars to be considered by the General Council in regard to a proposed representation to the Privy Council as to the licence of the Apothecaries' Hall, Dublin.

The third report contained the following conclusions: "1. Notwithstanding a considerable inducement to take the first professional examination at the Apothecaries' Hall, students do not to any appreciable extent, when commencing the study of medicine, select the Apothecaries' Hall as the means of obtaining a registrable qualification. 2. Many who obtain the L.A.H. diploma have commenced their series of professional examinations, but have failed to obtain a qualification elsewhere, and the cases given support this statement."

Dr. MAGENNIS observed in relation to the third report that it was hardly fair to expect him to reply completely to it as he had not received previous information of its contents. A copy of it might surely have been given to him the night before. In these circumstances it was only fair that its consideration should be postponed until the November session.

Sir CHARLES BALL moved: "That it appears to the General Council that the course of study and examinations to be gone through in order to obtain the qualification of Licentiate of the Apothecaries' Hall of Ireland are not such as to secure the possession by persons obtaining that qualification of the requisite knowledge and skill for the efficient practice of their profession." He said that as long ago as 1895 a somewhat similar question arose before the Council. From 1888 to 1894 a Conjoint Board had existed between the Royal College of Surgeons in Ireland and the Apothecaries' Hall for the purpose of holding qualifying examinations in medicine, surgery, and midwifery. It was frequently inspected, and it was reported that the medical portion of the examination was not sufficient. This was reported in the ordinary way to the Privy Council. Before the Privy Council had heard the case the Royal College of Surgeons withdrew from the conjunction, and the Privy Council replied that it appeared to be unnecessary for it to come to a decision as the Conjoint Board was no longer in existence. There had been no inspection of the Apothecaries' Hall of Ireland under the Medical Act, 1886, since 1902, but instead of that assistant examiners were required to report to the General Medical Council on the whole final examination, not only in surgery, but in medicine and midwifery. From this time on the assistant examiners furnished reports. Some of these contained very useful information. They almost invariably reported that the final examinations were sufficient. In May, 1913, it was decided to discontinue the reports from assistant examiners on the subjects of medicine and midwifery at the final examinations of the Apothecaries' Hall, and to appoint a representative or deputy to be present at all the examinations other than surgery held by the Hall, and to report thereon. Dr. J. Magee Finny was appointed. In 1895 the Apothecaries' Hall said before the Privy Council that one of the reasons why their power to grant qualifications should not be withdrawn was that "young men who cannot afford to pay high fees for examination elsewhere pass the examination at the Hall at moderate cost." The fact was that the fee charged by the Apothecaries' Hall for the first professional examination was only one-third of that charged by the Conjoint Board of the Royal Colleges in Ireland for the same examination, but the total fees charged for the subsequent examinations, including the final examination, were the same for both bodies. As would be seen from the summary of particulars, Dr. Finny had reported that during the year when he acted as deputy, in which there were four stated examinations, no candidate presented himself in all the subjects of the primary professional examination, while only a single candidate presented himself at one examination in physics and biology, and he withdrew before the oral portion of the examination. The Apothecaries' Hall said that the reason they had so few students for the early examinations was that the General Council refused to register as medical students candidates who had passed the preliminary arts examination held by the Apothecaries' Hall. By direction of the Council (Sir Charles Ball, still quoting from the summary of particulars, proceeded to say) the Examination Committee made an analysis of the returns sent in by the various licensing bodies as to the exemptions granted from professional examinations. This analysis was made for the five years 1907 to 1911. The returns furnished by the Apothecaries' Hall showed that during that period 51 candidates were granted exemption from some portion of their professional examinations on the ground that they had passed similar examinations elsewhere. During the same period only 37 candidates passed for the L.A.H. diploma, and the returns furnished to the Council did not show whether any one of the 37 candidates had passed all the professional examinations at the Apothecaries' Hall. These facts showed that students did not to any appreciable extent select the Apothecaries' Hall from the commencement of their professional course as the means whereby they might obtain a registrable qualification in medicine, surgery, and midwifery. The committee believed on very strong evidence that almost all the candidates who came up for these examinations were those who, having passed some of their professional examinations elsewhere, had failed to obtain their qualification elsewhere. It seldom happened that the full previous professional history of candidates who took the L.A.H. came under the notice of the Council, but statements were obtained by the Registrar from the licensing authorities concerned relating to three gentlemen who registered on the L.A.H. between May, 1912, and March, 1913. He would like to draw the attention of the Council to what the summary of particulars said. This was the passage:—"Mr. X., registered as medical student Dec. 26th, 1911, was rejected in all three subjects of the First Professional Examination held by the Scottish Conjoint Board January, 1912, was rejected in chemistry and biology, but passed in physics March, 1912. He registered the diploma L.A.H. Nov. 25th, 1912, less than one year from the date of registration as a medical student. Mr. Y. was rejected twice in chemistry and once in biology at the First Professional Examination of the Irish Conjoint Board. He was afterwards rejected twice in anatomy and once in physiology. In January, 1912, he was examined for the fourth time in pathology and obtained no marks. He subsequently obtained the L.A.H. at a time when the separate examination in pathology had been temporarily discontinued. He registered in March, 1913. Mr. Z. had been rejected six times in pathology, three times in materia medica, seven times in forensic medicine, and four times in medicine, the only portion of the Final Examination at the Irish Conjoint Board at which he presented himself. On the last occasion (January, 1910) he obtained 70 out of a possible 250 in clinical medicine. He registered as L.A.H. in May, 1912. The Apothecaries' Hall have declined to discuss these cases, but have not challenged the facts." The reason why the Apothecaries' Hall of Ireland declined to discuss these cases was because the gentlemen in question had become qualified. It was true that Dr. Finny, who attended from 1913 to 1914, spoke favourably of some portions of the examinations, although he made serious comments on other portions. It was desirable to recall to members of the Council some of the things that Dr. Finny said. For instance, in regard to physiology at the examination in July, 1913, he reported: "The very smallest acquaintance with the subject seemed to satisfy the examiner, and the questions were by no means of a searching character." He further reported: "The facilities for an examination in practical physiology were *nil* with the exception of the microscope in histology." In pathology he said that in July, 1913, the only examination was in connexion with the orals in medicine and surgery. In 1914 the separate examination was reinstituted. Dr. Finny spoke favourably of this new examination, "now that it is given a special place to itself in 1914; previous to this change it was open to grave objection." The motion which he (Sir Charles Ball) now proposed was a simple one. What would happen if it was adopted by the Council? It became a question for its further consideration whether any move in the direction of reporting to the Privy Council should be carried out. But the passing of the motion did not in any way bind the Council to report its finding to the Privy Council. The Medical Act said that "if it appears to the Council ...... it shall be lawful" for it to represent to the Privy Council. It was not incumbent on the Medical Council to make the representations. The Council might do so if it desired. There were one or two points which he desired to mention. A gentleman who registered as a member of the Apothecaries' Hall of Ireland had practically all the advantages of any other registered medical practitioner. A large proportion of those who took this particular diploma very soon afterwards came to some of the Royal Colleges, and presented themselves as registered medical practitioners seeking the separate licences given by those Royal Colleges. If the gentleman succeeded in passing the examination he could come and register his new qualification, not as an additional one, but in substitution for his first acquired one.

Mr. VERRALL seconded the motion. In November he seconded the proposal for an inquiry, and now, having satisfied himself of the justice of this motion, he proposed to second it. Sir Charles Ball spoke out of full knowledge on this matter. He did not think that, subject to any explanation or reply, anybody could doubt that there was a substantial case for impugning the value of these examinations. Even if the Council were prepared to continue the expense of supervising this particular examination there was no proof that it would provide such a test of candidates as the Council was bound to see was given.

Dr. MACDONALD moved as an amendment, "That the further consideration of the motion be adjourned to the November session." He said that his reason was that the report had not been long enough in the hands of the Council for consideration. The report only came into the hands of members that day. It might be necessary to pass the motion, but they should first have time for consideration.

Sir HENRY MORRIS seconded the amendment. He said that he was at a loss to know what would follow if this motion was passed. If it were passed there would be no alternative, if the Council acted consistently, but to send it to the Privy Council. If the Council did not think that course should be taken, then he wanted to know what course would be taken. Surely the Council would not pass a resolution of this sort without something following on it. It was clear that if the Council passed a resolution of this sort something ought to be done to take care that if the examinations were to be continued the course of study should be such as to bring the examination up to a proper standard. He confessed that he did not see the point of Sir Charles Ball's remarks about the man who had got the L.A.H. coming to London and getting the M.R.C.S. and the L.R.C.P., and substituting that qualification for the L.A.H. on the Register. Why should he not? He was sure that Sir Charles Ball did not mean to insinuate that the Royal College of Surgeons of England was likely to pass a man any easier because he was a possessor of the L.A.H. It was quite possible that the man might pass the examination because of the amount of study which he had done after obtaining the L.A.H. He was sure Sir Charles Ball could not have made the remark to prejudice the body for which he (Sir Henry Morris) was speaking. It was unhappy that he should have made the remark.

The PRESIDENT said that he would explain what courses were open if the motion was passed. Some time ago legal opinion was taken on the consequences of motions of this kind. He was advised that the Act was clear. The Council was entitled to pass such a resolution as this, but it was not obliged by anything in the Act or in the nature of the case to report it to the Privy Council. The alternative course was to send the motion to the Apothecaries' Hall of Ireland along with the summary statement on which the motion was based, and to invite any reply or any suggestion of improvement or any suggestion of alteration of the present system which the authorities of the Hall might desire to bring to the notice of the Council. That could be done if this motion was passed and the Council saw fit.

Sir JOHN MOORE said that he would vote against the amendment. It was futile to say that this subject was sprung on the Council. It was all very well for people in England to talk about it. But as representative of the

Royal College of Physicians of Ireland he could say that one candidate who was rejected at its final examination went over to the Apothecaries' Hall of Ireland and passed for the L.A.H. He afterwards came back and asked the Royal College of Physicians to examine him again. He was rejected. The Royal College had thought it necessary to alter its by-laws, and to say that it would not accept any medical practitioner unless he fulfilled certain conditions. The thing was becoming little short of a scandal. This matter should not be postponed unduly. It had been dragging on year after year, and was damaging the standing of medical men in Ireland.

Dr. Norman Moore did not regard the motion as necessarily hostile to the Apothecaries' Hall of Ireland. It was not deliberately intended to injure that body, and he would vote for it in the hope that it would do good to the Hall and lead to its reformation. It was quite clear from the discussions which had taken place in the Council that it needed reformation. At the same time it would be very wrong to send this resolution to the Privy Council. That would be a hasty act, which the Medical Council should not do. This was a final opportunity to the Apothecaries' Hall of Ireland to put its house in order. The question of the Hall's examinations had been before the Council for ten years.

Dr. Little observed that the matter had been under consideration not 10 years, but 30 years.

Dr. Magennis said that the motion was practically a first attempt at the extinction of an old Irish institution. On the reports of Dr. Finny he thought that any court would come to the conclusion that the examinations of the Hall were sufficient. The reports which had been submitted to the Council would show that they had been improving year by year. He maintained that the examinations in medicine and surgery were as difficult as those held elsewhere. His great difficulty as representative of the Apothecaries' Hall of Ireland in dealing with this report was that he had received it only a very short time ago. To him Sir Charles Ball had appeared to be the prosecutor in this case.

Sir Arthur Chance expressed sympathy with Dr. Magennis in regard to the short notice he had had.

Dr. Caton said that it was with great reluctance that many members of the Council had been forced to the conviction that the examinations in question were not satisfactory. This opinion was the cumulative effect of a very large number of points that had been brought forward not only now but in the past. They felt that there was a need either for reform or for extinction. He was, however, strongly opposed to the motion being sent to the Privy Council. It should be sent to the body immediately concerned so that it might have an opportunity of considering it and making the necessary reforms. If no reforms were made then the Council ought to send this or a similar motion to the Privy Council.

Dr. Saundby hoped that the motion would not be postponed, but that it should be passed and sent to the Apothecaries' Hall of Ireland.

The amendment of Dr. Macdonald was rejected on a show of hands.

The motion of Sir Charles Ball was carried by 29 votes to 2. Three members did not vote and four were absent.

Dr. Norman Moore moved that "this resolution, together with the report of the Examination Committee on the summary of particulars, be forwarded to the Apothecaries' Hall of Ireland for its information."

Sir Henry Morris seconded. He thought that it was reasonable that some indication should be given to the Apothecaries' Hall in what way modifications or additions to their curriculum and examinations should be made.

Dr. Magennis said that it would be unfortunate if the authorities of the Apothecaries' Hall, who were anxious to improve and who had improved their examinations, were not assisted by the Council as to the manner in which they ought to improve them. Any recommendations or suggestions made by the Council to the Apothecaries' Hall, he would guarantee, would be stringently carried out.

The President remarked that the Council could not undertake the duty of governing a body which was capable of governing itself. The Council could not both pass the final verdict on these matters and at the same time be responsible for the regulations.

The motion was agreed to

The Pharmacopœia Committee.

The President submitted the report of the Pharmacopœia Committee, which was in the following terms: "Up to the end of the year 1914 the total sales of the British Pharmacopœia (1898) amounted to 46,535 copies, and those of the Indian and Colonial Addendum amounted to 4529 copies. The British Pharmacopœia (1914) was issued in pursuance of the Council's instructions on Dec. 31st, 1914. Up to May 29th, 1915, the number of copies sold amounted to 17,239. As the first issue of 20,000 copies is thus nearly exhausted, a second issue of 10,000 copies has been prepared and will shortly be ready for distribution. The opportunity has been taken to amend the typographical faults which were noted in a slip attached to the first issue, together with a few others of minor importance. The only alteration in the text which calls for notice is that referring to the specific gravity of guaiacol. This should read 1·116 to 1·140. The Government of India has intimated that no special edition of the Pharmacopœia for use in that country will on this occasion be required. The Belgian Government has courteously undertaken to inform foreign governments, who were parties to the international agreement of 1906, of the publication of the British Pharmacopœia (1914) and of the manner in which effect has been given therein to the recommendations the agreement contained. The Finance Committee have furnished figures relating to the expenditure of the Pharmacopœia of 1914, as compared with that on the Pharmacopœia of 1898, which show that a saving of about £2205 has been effected in the case of the former. A large proportion of the saving is due to the advantageous arrangements made with the printers and publishers, and to economy in the expenses of the committee. The committee have received with regret the resignation of their secretary, Dr. Nestor Tirard. He has held the office for 20 years, and during that time has seen through the press the Pharmacopœia of 1898, and has acted as senior editor of the Pharmacopœia of 1914. His services to the committee have been many and valuable, and have been rendered in a manner which won for him its constant esteem. His important duties as commanding officer of the 4th London General Hospital occupy his time so fully that he is now constrained to limit his other engagements. The committee, in accepting Dr. Tirard's resignation, conveyed to him an expression of their high appreciation. They suggest that the President should be authorised to express to him, in the name of the General Council also, its grateful acknowledgments of his able work on its behalf."

The President, in submitting the report, drew special attention to the passage in which the committee expressed its regret at the resignation of Dr. Tirard and its high appreciation of his work. He was sure that the Council would desire to authorise him to convey to Dr. Tirard the expression of their appreciation of his long services.

Members: Hear, hear.

The President said that the members of the Council all recognised Dr. Tirard's devotion to the country, which had induced him to lay down his office as secretary of the Pharmacopœia Committee in order that he might fully devote himself to his military duties.

It was then agreed by the Council that the President should be authorised to convey to Dr. Tirard "its sense of the very valuable services which he had rendered in the course of the last 20 years as secretary of the Pharmacopœia Committee and editor of the British Pharmacopœia, 1914."

Students' Registration Committee.

A report was submitted from the Students' Registration Committee.

On the motion of Dr. Norman Moore it was resolved (1) "That satisfactory evidence as to visitation having been received, Reading School, Blaenau Festiniog County School, and the Intermediate County School, Towyn (Merionethshire), be added to the list of recognised teaching institutions approved by the Council"; and (2) "That the City of Dublin Technical Schools be added to the list of recognised institutions approved by the Council, so far only as their day classes are concerned."

Appointment of Registrar.

On the motion of Dr. Norman Moore, seconded by Sir Henry Morris, Major Norman C. King was reappointed Registrar for the ensuing year.

The Council adjourned.

FRIDAY, JUNE 4TH.

Penal Case.

The Council resumed the consideration of the case of Mr. A. B. Kramer.

The PRESIDENT said: I have received a telegram from Mr. Kramer: "Sorry unable to appear. Letter following by express messenger." The letter has just come. It says: "I wish to apologise for the inconvenience and delay caused by indisposition yesterday, and after a bad night I feel quite unable to appear at the Council this morning as wired a short time ago. If the Council will be good enough to postpone the hearing until I am well enough to appear all the accusations brought against me will be fully answered." A telegram and a special messenger have been sent to Mr. Kramer stating that the case is proceeding and his presence is desired. No medical certificate has been sent indicating that he is unable to be present. I have asked the Insurance Commissioners to allow one of the local officials, Mr. Groves, to come as a friend of the Council and give us such information as is in his power, not as a witness upon either side.

Mr. GROVES, clerk to the County Insurance Committee of Northamptonshire, said that intimations of the time at which transfers of panel patients could be made were inserted in the local newspapers. It was therein stated that the notices must be in before Dec. 1st. He described the procedure adopted in the transfer.

The PRESIDENT: Do you issue a blank card to a person who has not applied for a transfer?

Mr. GROVES: Certainly not.

Were there many applications for transfer in the district of your committee last November?—Approximately 240 in the whole of the county.

Can you say whether there were many applications for transfers in Bulwick?—I can tell you how many Mr. Kramer had transferred to him. There were 91 cases in which people transferred from another doctor to him.

Of the 91, had all been preceded by an application on behalf of the insured person for the transfer?—Yes.

Do you take any steps to ascertain the authenticity of a notice to transfer?—No. We accept the letter. We verify that there is an insured person. We do not verify the handwriting or the signature.

Mr. GROVES handed in the original applications for transfer in a number of cases.

The PRESIDENT: Will you look at these cards? (Certain cards were handed to Mr. Groves.) Will you look how the body is filled up? Is that in the same writing as this application?

Mr. GROVES: I should think so. In his experience the insured person frequently only signed the card at one place.

Mr. PARKER addressed the Council.

The PRESIDENT stated that the messenger who had been sent to Mr. Kramer reported that he had left his lodgings and it was not known where he had gone.

After deliberating *in camerâ*, the PRESIDENT said: "I have to announce in public that the Council have adjudged Alfred Bertie Kramer to have been guilty of infamous conduct in a professional respect, and have directed the Registrar to erase from the Medical Register the name of Alfred Bertie Kramer."

Dental Education and Examination Committee.

Mr. TOMES submitted the report of the Dental Education and Examination Committee. He said that an application had been received from the National University of Ireland that their degrees of Bachelor of Dental Surgery and of Master of Dental Surgery should be recognised, particulars of the curriculum prescribed by the University being submitted. In accordance with the recommendation of the committee he moved: "That the degrees of Bachelor and Master of Dental Surgery of the National University of Ireland be recognised."

Dr. KNOX seconded.

The motion was agreed to.

Mr. TOMES said that an application had been received from the University of Melbourne that their degree of Bachelor of Dental Surgery be recognised. This degree was only obtainable by those who had gone through the courses for the Licence of Dental Surgery, and this licence was granted to them. The licence was already recognised by the Council, so that the question was merely the admission of the Bachelor degree to the columns of the Dentists' Register. He concluded by moving that "the application of the University of Melbourne should be acceded to."

Dr. KNOX seconded.

The motion was agreed to.

Mr. TOMES went on to refer to a passage in the report which stated that "an application has been received from the University of Illinois (i.) that its College of Dentistry be recognised as a teaching body; (ii.) that its degree of Doctor of Dental Surgery be recognised. With regard to (i.) it is pointed out that the recognition of schools as teaching bodies does not lie in the hands of the General Medical Council; with regard to (ii.) the curriculum extends to only three years instead of four as in Great Britain. The information furnished as to the scope and conduct of the examinations is quite insufficient to enable the committee to judge of them." He moved that "the application of the University of Illinois be not acceded to."

Dr. KNOX seconded.

The motion was agreed to.

The Alleged Deficiency of Qualified Dentists.

In its report the Dental Education and Examination Committee narrated the steps which had been taken in pursuance of a resolution of the previous session under which the committee was asked to consider and report on questions affecting the dental curriculum and the supply of dental practitioners. Power was given to the committee to communicate with the licensing authorities on the subject. The report stated that a letter had been sent to the licensing authorities on March 11th by the acting registrar. It was in the following terms:—

"At the November Session (1914) of the General Medica Council Dr. Newsholme, medical officer of the Local Government Board, called attention to the fact that the number of dental practitioners registered in the Dentists' Register showed no appreciable increase since the institution of the Register 36 years ago. The total number on the Dentists' Register for 1879, which included all those in practice prior to the passing of the Act in 1878, was 5289, of whom 9·17 per cent. possessed dental qualifications granted by the licensing bodies; the total number in the Register for 1915 is 5426. A steadily growing proportion, now amounting to 71·08 per cent., are registered in virtue of qualifications granted by the licensing bodies, but the additions from this source are not more than sufficient to make up the loss by death or removals. It was suggested that the supply of registered dentists is insufficient to meet the increasing needs of the population; and it was pointed out that in recent years dental practice by unqualified persons had undergone a very great extension in many parts of the country. The General Medical Council expressed no opinion on the statements made in the course of a short discussion, but instructed its Dental Education and Examination Committee to consider them, to make on behalf of the Council such inquiries as might be of service, and to report to the Council at its session in May, 1915. Amongst the questions suggested for consideration by the Committee are the following:—Assuming for the moment that there is a real shortage of qualified dentists, and that it is desirable in the public interest that their numbers should be increased to a considerable extent: (1) To what extent is the deficient supply attributable to the failure of the existing law, as judicially interpreted, to check unqualified practice? (2) To what extent is it due to the inability of candidates to pass the required preliminary examination in Arts before commencing professional study. (3) To what extent is it due to the length, stringency, and expensiveness of the courses of professional study and examination required for qualification? If the points enumerated in the latter (3) be thought to be important factors: (4) What modifications, if any, are possible in the direction of lightening the present curriculum without impairing the sufficiency of the guarantees for efficient practice contemplated by the Dentists Act? As one of the authorities interested you are invited to communicate to the Council's committee any conclusions your experience may have enabled you to form on these points, and upon the subject of dental education and qualifications in general. Such communications will, if it is so desired, be treated by the committee as confidential, in so far as that their source will not be disclosed without the authorisation of the body concerned."

The report went on to state that a covering letter was sent by the chairman of the committee to each of the dental schools, in which the further inquiry was made whether the supply of students was or would be affected by the ultimate selection of one or other of the alternative methods of obtaining instruction in mechanical dentistry—viz., at the hands of a private practitioner or in a department of a dental school. The committee regretted that as it had up to the present received answers from only about half the number of the licensing bodies and from a somewhat larger proportion of the teaching bodies, it was not in a position to make a complete report nor to make any recommendation. It was within their knowledge that some of the licensing bodies who had not yet answered had the matter under careful consideration, but were not yet in a position to make their report.

Dr. SAUNDBY mentioned that the body which he represented was considering the matter.

Sir HENRY MORRIS said that his College was also considering it. A joint committee was considering the matter to see whether any change could be made which might be advantageous to the public and the profession.

The report was adopted.

National Insurance Act Committee.

On the motion of Dr. KIDD, Sir Arthur Chance was appointed an additional member of the National Insurance Act Committee.

End of the Session.

At the close of the session of the Council on Friday, June 4th, it was intimated that Major N. C. King, the Registrar, who was present in khaki, had been instructed to report himself for duty with the 3rd Battalion of the London Rifle Brigade at Tadworth Camp. Major King received the good wishes of the Council on his departure. It is understood that he will be called to an important command in his regiment.

On the motion of Dr. NORMAN MOORE, a vote of thanks was passed to the President for his services in the chair.

The session then came to a conclusion, and the Council rose to meet again in November.

THE VALUE OF ANTITYPHOID INOCULATION.

IN view of the opposition that continues to be made in some quarters to the use of antityphoid vaccination, we are enabled, through the courtesy of Dr. L. S. Mackid, to publish the following report made by him as medical officer at Calgary, Alberta, Canada, to the Canadian Pacific Railway, on the results of a systematic antityphoid vaccination of the company's employees extending over the three years 1911–13:—

With the large increase of the population in the western country during the last few years it has been a hard matter to keep pace in a sanitary way with the growth. This is true not only of this country, but of all new districts which open up, and as a result we suffer from those diseases which follow insanitary conditions. Our worst enemy in this field is typhoid fever. To a large company like the Canadian Pacific Railway the presence of typhoid means a very great loss, much more than one would imagine without going into it thoroughly. We have already done our utmost to fight the condition by sanitation, and have been greatly rewarded for our efforts. We followed pretty closely the rules as laid down by the military authorities covering the sanitation of the camps. With the introduction of typhoid vaccine into the armies of the world and the marvellous results that have been recorded we decided to introduce it into the railway world.

To give an idea what typhoid means to a big company a few figures are given. When a man goes down with typhoid he is incapacitated for a period of at least four months, or in terms of days about 120 days. In the year 1911 there were about 320 cases of typhoid fever on the Alberta Division, which means a loss of time to the company of 38,400 days. Again, this disease comes just at the time of the year when these men are most needed, that is, in the fall of the year, when the work is being finished before the oncoming winter, and when the company is getting the harvest away and placing coal and other winter supplies all over the country. Now if it means all this to the company what does it mean to the man himself? It means that he is incapacitated just at the time when there is plenty of work for him to do. It means a heavy raid on his financial condition for medical, hospital, and convalescent expenses at the time of the year when he can least afford it.

Initial Difficulties.—Technique and Reactions.

Having all this in our minds we decided to approach the company and get their coöperation, and were met more than half-way in the scheme. This, however, was only the starting point, as we still had to get the consent of the men, as it was upon them that the vaccine had to be used. We interviewed as many as possible and placed the proposition before them as clearly as we could and were more than satisfied to find that a great number entered in the work, sufficient, at least, to warrant our going ahead with the vaccination. All the district surgeons were also eager to start ahead with the work as soon as possible. We soon found out that our troubles were only commencing. The men all had very painful recollections of having been vaccinated for small-pox and immediately put typhoid vaccination in the same category. We were also dealing with a non-disciplined lot of men whom we could not force to be vaccinated, so it had to be optional, and in several places it required a great deal of patience and some hard talking to convince them that it was being done for their own good.

For the complete treatment we used three inoculations at intervals of 10 days. The first inoculation consisted of 8 minims containing 500,000,000 killed bacteria. Ten days later a second inoculation of 15 minims containing 1,000,000,000 bacteria, and again, 10 days later, 15 minims of 1,000,000,000 bacteria. The site of the inoculation was chiefly the upper arm, either at the insertion of the deltoid muscle or the back of the arm into the triceps. These injections were done as far as possible in the afternoon, so that the reaction would be all over by morning. A few hours after the injection the reaction commenced like an oncoming attack of "la grippe"—slight headache, general soreness, lassitude, slight elevation of temperature, and in some cases slight nausea. This lasted for about 10 hours and was then completely gone. The local reaction was redness, pain, swelling, and heat. This lasted longer than the general symptoms, but was pretty well over in 48 hours. We used the ordinary hypodermic syringe with several needles, which were sterilised by boiling, a separate needle being used for each inoculation. The site of inoculation was simply prepared by painting with iodine, and after the injection was done no dressing was applied. Some of those inoculated showed more severe symptoms than the rest, such as syncope, which lasted for a short while, and was recovered from without any treatment. Examination of these men showed no reason why it should have happened. We found no condition that we could classify as a contra-indication to vaccination. As to the time lost as the result of the vaccination, about 95 per cent. of the men kept right on at their work. The other 5 per cent. were laid off for not longer than 48 hours.

Results Showing the Value of Antityphoid Vaccination.

In 1912 there were about 5500 inoculations done with two cases of typhoid developing amongst them, and one of these two had only received one injection and came down with the fever a few days later, so that it is possible that he was coming down at the time of the inoculation. Among the other men living under exactly the same conditions as the men who were vaccinated there were 220 cases of typhoid.

One of the most striking results of the vaccine was in a gang of about 35 men, who were camped within the city limits, and who absolutely refused to be vaccinated at first. In this camp 11 cases developed, and then the men began to ask to be vaccinated, which was done, and following it we had the only other case.

Dr. Maclaren, Dr. King, and Dr. Green used the vaccine in the treatment of cases, using at each injection small doses, the first of 1,000,000 bacteria and doubling it every fourth or fifth day. They found that in those cases which were treated from the beginning of the disease the complications were almost *nil*, although it did not lessen the course of the disease at all. Those cases that were well advanced before they came in under treatment showed no effect at all, the vaccine here being more harmful than beneficial.

For 1913 we have not as yet received all the reports, so can only give an incomplete report. So far the total number vaccinated is 2771, with 1 case developing fever, and against this there are reported 70 cases amongst the non-vaccinated. When all the reports are in, these figures will probably be between 8000 and 10,000.

The conclusions that we draw from this work are :—

1. We have a very valuable aid for the prevention of typhoid fever in the use of vaccine.
2. The name of vaccination should be abolished and inoculation should be used in its place.
3. When cases of typhoid come under observation early enough most of the complications can be lessened.
4. The use of the method should be advocated in all places where men are to be in camp and under doubtful sanitary conditions for any period of time.
5. The period of immunity is apparently indefinite, probably equal to that produced by a single attack of typhoid.

Since this report was made the various lists to complete the work for 1913 have been sent to us by Dr. Mackid. The additional number vaccinated was 8400 with only the one case developing, making a total vaccinated of 13,900, among whom 3 cases of typhoid developed. The figures read as follows ;—

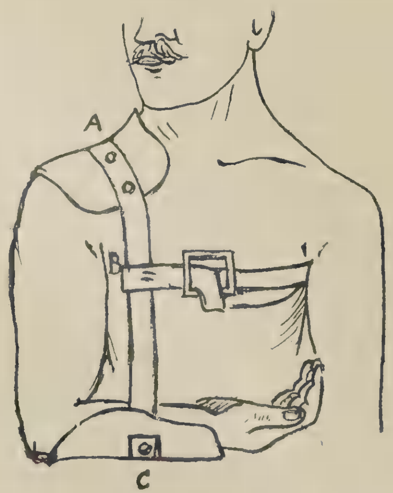
Total number men employed	24,000
,, ,, vaccinated	13,900
Number of cases among non-vaccinated ...	290
,, ,, ,, vaccinated	3

New Inventions.

A USEFUL SHOULDER-SPLINT.

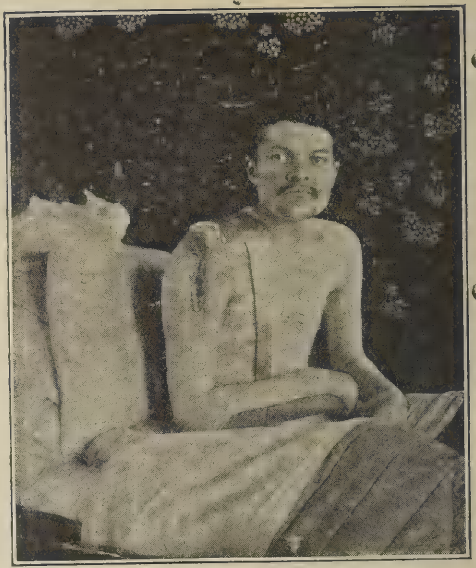
AFTER excision of the shoulder-joint it is often difficult to give the necessary support to the arm, and a splint which acts perfectly in the sitting position may be quite unsuitable when the patient is lying down.

FIG. 1.



The one here described is very comfortable and easily made, as well as cheap. It is S-shaped in side view, fitting *over* the shoulder and *under* the forearm. It consists of a kidney-shaped shoulder-piece (Fig. 1) A, of thin zinc or sheet steel, 7 × 3½ inches, or wide enough just to clear the neck muscles and the acromion on either side. This is riveted to the upper end of a piece of galvanised iron strap 1¼ inches wide and 1/16 inch thick, so that it (the latter) can be bent on its long axis to fit the chest. The splint C for the forearm is approximately 10 inches long and of the ordinary trough pattern, or long enough to reach to the wrist. It will be found that the forearm varies very greatly even in persons of the same height. This part of the splint is riveted to the upturned end of the upright strap-shaped bar at C. The whole splint is kept in place by a strap and buckle passed from a slit in the shoulder-piece behind and under the opposite axilla. The splint must, of course, be moulded and bent to a perfectly snug fit, and as a refinement a still more perfect result can be obtained by inserting a piece of house flannel soaked in plaster-of-Paris under the shoulder-piece, padded with wool, when the splint can be bent to fit this at leisure. The arm is bandaged to the side at night and the wound can be dressed without removing the splint.

FIG. 2.



The cost of the above is trifling and, what is more, the materials can be got even in an out-of-way French town, and it can be put together by anyone of the slightest mechanical ability.

J. CROPPER, M.D. Cantab.

Anglo-Ethiopian Hospital, France.

A RUSSIAN WOMAN DOCTOR.—According to the *Novoe Vremya* M. G. Stanishevskaya has been appointed *privat-docent* of the chair of pathology in the Imperial Novorossisk University. She is the first woman to receive this appointment in a Russian university. She finished her medical studies in Nancy in 1899, passed her examinations in the Moscow University in 1900, and in 1913 presented and defended a treatise for the degree of M.D.

BIRMINGHAM HOSPITAL FOR NERVOUS DISEASES.—The second annual report of the Birmingham and Midland Hospital for Nervous Diseases states that the new cases treated were 1093 and the total attendances numbered 13,215. Among the conditions most frequently dealt with were epilepsy 122 cases, neurasthenia 176, acute neuralgia 48, hysteria 34, neuritis 23, alcoholism 20, dementia and insomnia 18 each, and melancholia 16. The experience of the last two years has emphasised the need for beds. There has been a great increase in the employment of massage, and electrotherapy has been used with considerable success, so that the expenditure of £300 for the installation of more up-to-date electrical appliances has been sanctioned. The year's income amounted to £892, which left a favourable balance after payment of expenses of £143.

THE LANCET.

LONDON: SATURDAY, JUNE 12, 1915.

The Metropolitan Hospital Sunday Fund.

THE public is truly generous in its contributions to charity, and on the whole our general benevolence takes a practical rather than a sentimental form. Before the purse is opened the prospective giver seeks for proof that the exercise of his charity is needed. The professional beggar and the secretary of the faked charity both know this well, and will provide with fluent pen all the documentary evidence that the most exigent can desire, but while the harvest of the charlatans is great—far too great—the written word never speaks with the same force as the revealed fact. A mining disaster, a shipwreck, or a factory explosion appeals to the reason as well as to the imagination, and the realisation of the need at once calls forth a hearty response both in money and in personal help when the latter is required. It is the visible proof of their work that enables the hospitals of the metropolis to secure the amount of voluntary support that they receive, and in the same way it is the unrevealed character of much hospital energy which prevents that support from being as large as it should be. For there is little or nothing to stir the imagination of the public and help them to comprehend the enormous amount of sickness and suffering that is being ministered to daily within the walls of our great hospitals. In one large London hospital alone over 16,000 in-patients, nearly 170,000 out-patients, and 3917 maternity cases are treated yearly, and the Metropolitan Hospital Sunday Fund, in common with the King's Hospital Fund for London, exists to help 126 hospitals, to say nothing of other institutions. This year the privacy which surrounds hospital work has been modified by circumstances; the case of the sick and wounded soldiers has been public property and there is a wider knowledge of what hospitals really can do. The figures of admission to the London hospitals will be multiplied owing to the war, and will in themselves make a more powerful appeal than usual on behalf of the sick and suffering, but figures do not convey to the mind the vivid picture which the interior of our hospitals presents to the eye. It would not be practicable or decent to admit into the wards of our hospitals everyone who had a desire to see for himself the work of healing which is there carried on, but the hospital treatment of our wounded soldiers and sailors has been so ably described by the public press that there will be no excuse for not realising at any rate one side of hospital activities The skill and experience of the medical, surgical, and nursing staffs of our voluntary hospitals, and the completeness of equipment of these institutions, naturally make them the best possible places for treating such of the wounded as can be moved from the seat of war, and the hospitals have responded most generously to the call which the country has made upon them. This has not been done without entailing an expenditure severely taxing their already overburdened resources, and in many cases the burden has been increased by the necessity for extending existing accommodation and the difficulty of maintaining an adequate personnel.

If the public could fully realise the enormous amount of good work that is being done by our hospitals, not only on behalf of the poor, but indirectly also in the interests of those who are able to pay for medical treatment, there would, we feel sure, be a larger response to the yearly appeal which is made on behalf of the London hospitals by the Metropolitan Hospital Sunday Fund. For it is in the wards of our hospitals and in the laboratories of our medical schools that the skill and experience are gained which are demanded from the medical man by the whole community. And not only does the individual benefit, but collectively the gain is immense, for the general improvement in public health which has so characterised the later years of our era is due largely to the facilities for experimental study in chemistry, in bacteriology, and collateral sciences which are afforded by laboratories attached to or worked in connexion with our hospitals. Again, the coöperation of hospitals with the large army of workers in the sphere of tropical diseases has helped to make vast tracts of our colonial possessions inhabitable by the white man, thus extending the Empire and adding to our prosperity by increasing trade. These are only some of the great benefits which have accrued under our voluntary hospital system, making it, whatever may be its faults and failures, of inestimable benefit to all classes. To this record, however, must now be added the wonderful response to the call of war. Without the splendid initiative and organising power of the managements of our leading institutions this response could not have been made, and the great funds which collect on behalf of these charities have played a fine part in the national struggle by helping to keep the hospitals at full working strength. The Metropolitan Hospital Sunday Fund is one of the three great agencies which help to maintain the London hospitals, its main purpose being to collect money from the various religious congregations. Primarily the appeal is made through the churches, chapels, and missions of London, but in reality the large sums that are yearly distributed among the hospitals are made up of congregational collections, with the addition of private donations and legacies. As this second source of income must of necessity fluctuate it is of the greatest importance that every effort should be made to ensure an adequate collection on Hospital Sunday. Of recent years congregational collections have shown a steady decline, owing in a great measure to the fact that a large number of well-to-do people spend the week-end out of town. Appeals have been made to absent church members both before and after Hospital Sunday, but the result has not been at all satisfactory. The week-end habit should not, however, operate to the same extent this year, for there is more serious work on hand than these recurring holidays imply. Large calls have been made already upon the charitable in connexion with the war relief funds, huge liabilities are piling up ahead of all of us, and many of those from whom help was always forthcoming are serving their country at the front. These things will certainly militate against the Metropolitan Hospital Sunday Fund this year, and unless special efforts are made the collection which takes place to-morrow may suffer.

But never has the need for help been greater in the hospitals of the metropolis and never has it been more deserved than at the present time. The hospitals have been deprived of many of their valued workers who are giving their services directly to the men who are fighting abroad, while those who remain at home have been working at serious pressure to make up for the deficiency thus created. Yet, in spite of this, not only have the sick poor been attended to with the care and efficiency of normal times, but, in addition, thousands of the sick and wounded from the front have received devoted care in these institutions, removed from the terrible environment of the war area. This all means increased work, carrying with it an increased expenditure which has taxed the resources of the managers of our voluntary hospitals in some cases to breaking strain; and such facts should suffice to bring home to everyone who can help even in the smallest way the crying need for an increased financial support of the metropolitan hospitals. Without the aid of hospitals as centres for the training of nurses there would have been a deficiency in an important auxiliary to all medical and surgical treatment, and our hospitals have made many sacrifices in order that a sufficient number of nurses might be trained at short notice. To prompt action in this direction many must owe their restoration to life and health. For many years the management of the Metropolitan Hospital Sunday Fund has placed before itself the ideal of collecting for the medical charities of London and the vast outlying districts the sum of £100,000 on each Hospital Sunday, but this total has never been realised. The present moment is an admirable one for the public to show their gratitude to the London hospitals by placing at the disposal of the managers of the Metropolitan Hospital Sunday Fund a larger sum than usual—why not their ideal £100,000?—with which to lighten the burden of debt which presses so heavily upon many institutions.

Medical Organisation and the War.

Two great questions are concerned when we consider medical organisation in respect of the war. They are, first, the engagement of a sufficient personnel, and, secondly, its employment to the best advantage. The first question has been receiving the close attention of the medical authorities at the War Office, an Emergency Committee of the British Medical Association is considering it, and a strong Emergency Committee, with Dr. NORMAN WALKER as convener, has taken in Scotland practical steps towards answering it. But the second question is of equal importance, if only because a personnel that is working to the best advantage with its material is more economical in its employment of men than one where there is overlapping, or where there are many round pegs in square holes. The position of the medical service with the Expeditionary Forces depends, as it always has done, on the military situation. But great experience has now been gained. Tried men have been collected, and to a certain extent these are being detailed for the posts most suited to their capacities, so that some large general lessons in pathology are being learned. There remains, however, in the minds of many a feeling that all the splendid work might be more fruitful, might be simplified, and at the same time have its value disseminated, if there were some general supervision of work done; possibly it would then be found that men could be spared in some places for more suitable work in others.

In the hands of such surgeons as Sir ANTHONY BOWLBY and Sir GEORGE MAKINS, of such physicians as Sir WILMOT HERRINGHAM and Sir JOHN ROSE BRADFORD, each of whom is also a tried organiser and man of affairs, we may be sure that nothing has been wanting in the hospital treatment through the various areas that organisation would ensure; but, as we have pointed out before, each centre must work largely upon its own lines, as there is no recognised scientific supervision, while official means of intercommunication have not been established. At any given hospital as its staff changes men come in who have not had experience on the spot, and there is no machinery by which to place them in immediate possession of the lessons learned by their predecessors. The tendency to revert to classical treatment is therefore inevitable, and ground may have to be gone over again with clear waste of energy in the many directions in which classical treatment has to be modified to meet new and unexpected conditions. This may be going on in many localities, while it is clear that local experience will vary and local standards of practice will vary also, so that the lesson to be learned in one centre is not the same necessarily as that to be learned at another. It speaks volumes for the high standard of medical and surgical practice of this country that so many hospitals should have been staffed with good result by officers who have relied upon their own initiative for treatment, but general supervision from the centre would none the less be welcome. It is difficult to see how men at any given hospital can tell whether their patients, under the treatment which is being adopted, are doing as well as similar patients in other hospitals. There is not a definite medium for the interchange of knowledge and it is hard to say whether certain cases are being treated at the most suitable points in the lines or whether more sorting of material would not be of advantage both to medical men and to patients. If there were regular collecting and collating of results by an advisory body whose business it would be to inspect treatment all along the lines, from what is practically the front through the intermediary hospitals to the base hospitals, we feel that practical results would follow. There is no definite suggestion that the medical service is not good, and in numberless directions its achievements speak for it as wonderfully efficacious, resourceful, and devoted; the point is that its proven virtues would operate more promptly and widely under some central control. The work done cannot all be equally high in standard. Where it is not good at some point in the periphery central control would reinforce it. Where it is good the peripheral efforts would be recognised, the lessons learned in that place would be applied in another, investigation and scrutiny would be followed by coördination. In short, a service with automatic limbs would be endowed with a brain. In an epilogue to the address by Sir ALMROTH WRIGHT published in THE LANCET in April, he suggested that an Advisory Committee having much the same functions as those that have been indicated should be instituted. This body, to cover the field, should consist of a surgeon, a physician, and a bacteriologist. To these we would add a second surgeon to act as secretary and registrar to the committee, and we cannot help thinking that the Director-General of the Army Medical Service would find the recommendations of such a body of great assistance. Nothing, it must be clearly understood, can be done without the approval or order of the Director-General of the Army Medical Service. But such an Advisory Committee would, we are sure, enable him to discharge his onerous and important duties with less chances of waste of time, with less risks of re-duplication of labour, or of overlapping. The Director-General, while absolutely retaining his own authority, and retaining also the right to be advised by other distinguished officers, would look to such a committee to supply him with the results of experience and practice all along the lines, when it is quite likely that there would emerge general recommendations for treatment analogous to those which already prevail in the cases of tetanus and of typhoid fever. The Advisory Committee would be in a position also to suggest the best distribution of cases, so that we should not hear that "so many" cases had been relegated to a certain man, but rather that "such and such" cases had found their way to him.

We make these suggestions with the less diffidence because we know that something in the indicated directions has found favour in the sight of high authority. There is no intention to imply that the medical work with the Expeditionary Forces has not been good, for it is admitted on all hands that the Royal Army Medical Corps has earned the gratitude of the country and that the coöperation of civilian medicine and surgery has been valuable in the highest degree. But the war has already been a long one, and may continue for some time. Many therapeutic lessons have already been learned, and surely it would be advantageous to make a move in organisation which would place these lessons fully at the disposal of future workers.

Annotations.

"Ne quid nimis."

PRECAUTIONS AGAINST AERIAL ATTACKS.

THE dangers of an aerial raid may be said to be threefold. There is, first, the actual explosion of the dropped bomb which may instantly destroy life by the intense concussion formed, this acting directly or indirectly; there is the chance of poisonous gases being released; and, lastly, the incendiary bomb may cause a serious outbreak of fire. It is well to be on our guard against these contingencies. Of course, little or nothing can be done in the first contingency. Concealment in a well-protected shelter, as in an underground cellar, may be possible for some people in some circumstances, but the number of people to whom the advice applies is small. The protection of the household against poisonous or asphyxiating gases discharged by bombs at once suggests the same measures taken by our soldiers in the trenches. It is well to remember that most, if not all, asphyxiating gases are acid in character and that therefore they can generally be neutralised by the use of an alkali. The available alkali in every house is common washing soda. The bath towel made of netting with a big mesh when soaked in a 10 per cent. solution (1 lb. in one gallon of water) of this salt, and the excess squeezed out, would enable, in all probability, a person to breathe in an atmosphere contaminated by chlorine, nitrogen oxides, or sulphurous acid gas. The towel should be in double or quadruple layers so as to expose as much as possible the contaminated air to the neutralising action of the alkali. A dish-cloth or a well-squeezed-out sponge soaked in the same alkaline solution would answer equally well. The sponge forms a very comfortable and efficient respirator if thoroughly squeezed out before application. It adapts itself well to the mouth and nose. The breathing should be slow, inwards through the mouth and outwards through the nose. The protection of the eyes, unless special goggles are used, is more difficult, the simplest precaution being to shut them tightly in the event of the gas causing extreme irritation, until a purer atmosphere is reached. In any case it is well to learn how to move in an enforced darkness in one's own house. In the event of an outbreak of fire the sooner steps are taken the better chance there is of keeping the outbreak local. There is nothing so effectual as a wet blanket thrown over the scene of conflagration, followed by the application of buckets of water on the blanket. We strongly advise all those who possess gardening hose to have it near at hand for use in the house. Small fires can be quenched by throwing upon them a solution of ammonium chloride mixed with common salt; this when used at the outset is often effective. There are many chemical extincteurs on the market, some good, some worthless, but all requiring more or less technical management. It is doubtful whether the public should be advised to incur the outlay which their installation in the house involves, especially as a pail of ammonium chloride solution and a syringe would probably meet the case just as well. The simpler the precautions are the better, for as a rule simplicity in the matter of appliances generally means much less nervous handling in moments of excitement and a more effective dealing with the situation. The public would be well advised also if on retiring they turned off all lighting services at the meter and for night use reverted to candles. The house might be placed in great danger if gas or electric mains were damaged by an explosion or fire. It is well to remember what potentialities these services mean when they are let loose. The switch and the tap will control them, but if any part of the system is destroyed behind these the outbreak may well defeat all attempts to subdue it.

BACTERIAL FLORA OF WOUNDS.

THE attention of bacteriologists has naturally been prominently drawn to the bacterial infection of wounds produced during the present war. Investigations are being carried out as to the nature of the organisms present both in this country and in France. The results hitherto obtained are interesting, but can only be considered as experimental and preliminary to a combined investigation of scientists and surgeons. The National Research Committee is rendering valuable service by contributing grants towards the expenses of such inquiries. In another column we publish a communication from three observers who have been working on the bacterial flora of wounds, Dr. L. S. Dudgeon, Mr. A. D. Gardner, and Mr. F. Bawtree. The investigation was carried out in this country so that no records are given which refer to the type of bacteria found directly after injury. It is interesting to note that there is the closest similarity between the bacteriology of severe injuries of the soft parts produced by shrapnel and infected by manure and a street accident infected by horse-dung. There is usually infection of the damaged tissues with the B. aerogenes capsulatus, streptococci, and coliform bacilli. The authors express the opinion that the mere presence of the B. aerogenes capsulatus is not the important factor in a wound, but it is the presence of this organism in tissues which are under considerable increase of tension that is of such extreme importance. This would help to explain the beneficial results obtained by freely laying open the parts affected. Especial attention is paid to those wounds in which pathogenic anaerobes were found. Twenty-one wounds yielded cultures either of B. tetani or of B. aerogenes capsulatus, or of both. With a single exception every wound was also infected with aerobic bacteria in association with the anaerobes. The frequency with which B. coli appeared with B. tetani suggests that its presence may be particularly favourable for the survival of this anaerobe. Although no reference is made to treatment in this paper, the opinion is expressed that the prophylactic injection of antitoxin has been the means of saving the majority of the patients from serious disease arising from wound infection. The communication is of considerable interest from a bacteriological point of view, and the scientific investigation is preliminary to the application of measures intended to antagonise infection. We trust that a practical outcome of the research will soon be forthcoming.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: THE ELECTION TO THE COUNCIL.

ON Thursday, July 1st, a meeting of the Fellows of the College will be held for the purpose of electing five members of the Council. The vacancies are due to the retirement in rotation of Sir Rickman J. Godlee, Mr. C. W. Mansell Moullin, Mr. Charters J. Symonds, and Mr. Charles Ryall, and by the death of Mr. C. B. Lockwood. There are 24 members of Council, and three of these retire each year, but Sir Rickman Godlee did not retire last year as he was President at the date of the election. The following list gives the dates at which the several members will retire:—

1916: Sir A. Pearce Gould (first elected 1910); Sir W. Arbuthnot Lane; Mr. W. F. Haslam.

1917: Mr. W. Harrison Cripps (first elected 1905); Sir W. Watson Cheyne, the present President (first elected 1897); Mr. J. Stanley Boyd.

1918: Mr. Bilton Pollard; Sir J. Bland-Sutton.

1919: Sir Berkeley G. A. Moynihan; Sir G. H. Makins, Vice-President (first elected 1903); Mr. L. A. Dunn.

1920: Mr. D'Arcy Power; Sir F. S. Eve, Vice-President; Sir Anthony Bowlby, K.C.M.G., Vice-President (first elected 1904).

1921: Mr. J. Ernest Lane; Mr. H. J. Waring.

1922: Mr. C. A. Ballance, M.V.O. (first elected 1910); Mr. W. Thorburn; Mr. W. McAdam Eccles.

For the 5 vacancies there are 9 candidates. Of the retiring candidates only two, Mr. Charters Symonds and Mr. Charles Ryall, offer themselves for re-election. The other candidates are the following, the figures in brackets representing the date of obtaining the Fellowship:—Mr. J. B. Lawford (1885), Mr. T. H. Openshaw (1886), Mr. H. B. Robinson (1887), Mr. W. G. Spencer (1887), Mr. F. F. Burghard (1888), Mr. H. F. Waterhouse (1890), Mr. P. Macleod Yearsley (1893).

A CASE OF GENERALISED PNEUMOCOCCAL INFECTION.

A REMARKABLE case of this nature is reported by Dr. D. A. Cameron in the *Medical Journal of Australia*, vol. i., 1915. A girl, aged 7 years, was taken ill on the morning of Oct. 22nd, 1914. She had severe pain in the abdomen, sickness, and diarrhœa. The temperature was 104° F., pulse 140, respirations rapid, and there was general abdominal tenderness. Pneumonia or appendicitis was suspected. Twelve hours later the first operation was performed. There was considerable fluid in the abdominal cavity and the appendix was much inflamed. The fluid yielded a pure culture of pneumococcus. The temperature afterwards still remained high, though drainage was satisfactory. Pain was complained of in the right shoulder. A week later cough developed. The second operation took place on

Nov. 4th, following aspiration, and 14 ounces of pus were removed from the right pleural cavity; this again showed pneumococci. Following the suggestions of the symptoms, operations were considered necessary for left-sided empyema, containing four ounces of pus (Nov. 13th); for intestinal obstruction revealed at operation (Nov. 24th) as due to strands of peritoneum dragging upon the junction of the small intestine and the colon; for a third collection of pus in the right upper chest, and apparently having no connexion with the lower focus previously drained (Dec. 13th). This relieved the pain in the right shoulder. Finally, on Jan. 18th, the last operation, upon the right hip-joint, released more pus, and from that time onwards the child, wasted to a skeleton and throughout having pyrexia, made an uninterrupted recovery. It is remarked that vaccines proved of no avail. Notable also is the fact that no pyæmia ensued, in spite of the obviously generalised distribution of the infecting organisms.

THE SPREAD OF TYPHUS FEVER BY LICE.

READERS of that extraordinarily vivid book the "Mémoires du Sergent Bourgogne," giving the report of an eye-witness and victim of the disasters of Napoleon's Russian campaign in the year 1812, will remember the horror with which the author found himself suddenly infected with vermin a few days after the French retreat from Moscow had begun. The infection was picked up, he says, from some reed mats on which he went to sleep in the village of Dorogoboui; as soon as he felt the itching he got up, stripped, and threw his shirt and trousers on the fire. The vermin exploded in the flames like the fire of two ranks of infantry; but for the next two months the gallant sergeant was never free from vermin, and in consequence his Mémoires contain repeated longings for clean linen. General de Ségur, who wrote a well-known account of Napoleon's Russian campaign from the point of view of a staff officer, concerned himself with such things as the European political situation, Napoleon's plans and conversation, or the disagreements between the various members of his staff, but hardly touched upon such lowly matters as pediculosis among the French troops. Yet the subject was one of the utmost importance, had he known it; in its retreat from Moscow Napoleon's Grand Army was harassed by a severe epidemic of typhus fever carried by vermin, and the soldiers forming the wreck of the Grand Army spread death and destruction by typhus fever right and left wherever they passed through Germany on their way from Russia. As Dr. A. Rose points out in "Napoleon's Campaign in Russia" the position of affairs is clearly shown in the report of Dr. Krantz, a Prussian army physician attached to the Grand Army, published in 1817. The lice carried typhus fever with them, and soldiers showing no sign of the disease were capable of infecting the families of civilians in whose houses they were quartered. The rapidity with which the infection spread is indicated by facts such as the following. In the 1st East Prussian Regiment of Infantry there was not a single case of typhus fever until it had marched for 14 miles on a highway along which the French had passed, while after this there were 15 or 20 cases in every company of 150 men. Dr. Krantz had most interesting observations to record on the treatment of typhus fever. The open-air treatment, inevitable in the case of soldiers on the march, had a mortality of only 2 or 3 per cent., while the patients treated in hospitals died in large numbers, also infecting and killing the physicians and nurses who attended them. Soldiers presenting the headache, nausea, and vertigo that are the first symptoms of typhus fever, were dressed warmly and put into wagons and covered with straw, with other precautions to avoid frostbite. At night they were quartered in isolated houses to avoid the spread of infection. It was remarked that the open-air method of treatment abolished the stage of convalescence after the attack was over. Three days after the patients had been free from fever for 24 hours they were fit for half a day's march or more. Dr. Rose, in a recent issue of the *Medical Fortnightly*, St. Louis, lays great stress on the importance of killing the lice that seem even nowadays, to judge by what one hears from the front, to be inseparable from fields of battle, and he quotes on this point from a circular recently issued by the German Imperial Board of Health. It is obvious that powerful parasiticide drugs must be used to kill the lice, in cases where baking or boiling the infected clothes, or, as Virgil puts it, *Infectum eluitur scelus, aut exuritur igni* is a counsel of perfection and impracticable. The Board recommends for this purpose sabadilla vinegar (containing veratrine), kerosine, eucalyptus oil, and balsam of Peru. Weyland in the Franco-Prussian war of 1870 found benzine excellent for this object. The clothes were exposed to benzine vapour in a tightly closed box for two or three hours. A recent number of the *Deutsche Medizinische Presse* speaks of asafœtida and naphthaline, regretting that no satisfactory prophylactic and no curative remedies have yet been found. Dr. Rose thinks that benzine or gasoline will probably prove the most serviceable. The German State railways have an excellent plan for cleansing their railway carriages. The whole carriage is run into a large iron cylinder, which is hermetically sealed; then the air is exhausted from the cylinder and its contents are warmed up (far short of the boiling point of water) by steam pipes. The lice infecting the upholstery of the carriage can survive the exposure to a partial vacuum, but when the heat is turned on their body fluids are evaporated at the low pressure, and so they die the death of desiccation.

THE DEATH-RATES DUE TO DISEASE OF THE HEART, ARTERIES, AND KIDNEYS.

IN the United States of America the death-rates due to chronic heart disease, arterial disease, and renal disease all show considerable relative and absolute increments in the last few decades. Excluding valvular disease of the heart and acute nephritis, Dr. A. E. Shipley in the Bulletin of the Department of Health, New York, argues that all these conditions are promoted by (1) environmental circumstances demanding a persistent hyperactivity of the circulation; (2) the retention of toxic products of metabolism in the blood; and (3) senile change, so-called. Examining the death-rates for America in 1912 he finds that one-fifth of all deaths were due to diseases of the cardio-vasculo-renal type. In 1870 the death-rate from all causes was under 29 per 1000, in 1912 it was under 15 per 1000, but in 1912 the death-rates from these disorders in persons aged 45 or more had increased by from 100 to 300 per cent., as compared with the death-rates recorded at these ages in 1868. Dr. Shipley asserts that these disorders are largely preventable, and calls for special measures to educate the public in the avoidance of the conditions known to promote the occurrence of these degenerations. Among the things to be avoided are undue mental strain and worry in business, abnormal social activity, over-eating, the indulgence in too much protein food, excessive alcoholic indulgence, lack of fresh air and exercise, chronic constipation and intestinal stasis, and the vascular degeneration so often associated with such diseases as syphilis, rheumatism, lead poisoning, and the like. Emphasis should be laid on the importance of drinking water as an aid to ridding the blood of toxic substances that raise the blood pressure. Adults should undergo medical examination from time to time, so that the beginnings of these degenerations may be detected and treatment for them instituted in their early stages. Dr. Shipley develops a comprehensive scheme for educating the public in these matters, to be managed by local health departments on much the same lines as tuberculosis campaigns or pure milk campaigns have been managed in the past.

LAVAGE IN CARBOLIC ACID POISONING.

IN carbolic acid poisoning lavage with various solutions has been recommended, and two substances—alcohol and sodium sulphate—have been particularly recommended, apparently on rational grounds. In the Johns Hopkins Hospital Bulletin Dr. David I. Macht has published an important experimental investigation on the subject and shown that alcohol is not only useless but injurious. Its use is due to a fallacious deduction from the fact that it is beneficial in carbolic acid burns. Alcohol was introduced as an antidote for carbolic acid in 1899 by Dr. S. D. Powell, of New York, who used to demonstrate his view by washing his hands in pure carbolic acid and then in alcohol, and even by filling his mouth with the acid and quickly rinsing with 95 per cent. alcohol. Subsequently isolated cases were recorded as illustrations of the value of alcohol. With regard to the use of sodium sulphate, contradictory researches have been published. In the higher animals the first symptoms of carbolic acid poisoning are weakness and a peculiar muscular tremor. These are soon followed by clonic convulsions, collapse, coma, and death. There is very little pain, as the central nervous system is quickly paralysed. Dr. Macht introduced liquefied carbolic acid, both in concentrated solution and in various dilutions through a stomach tube into various animals and washed out the stomach at different periods after the appearance of symptoms with solutions or suspensions of various substances—egg albumin, alcohol, sodium sulphate, sodium sulphite, and syrup of lime. Albumin proved of little use and sodium sulphite too poisonous. Lime water and syrup of lime, recommended in the hope of forming an insoluble compound, were found unsatisfactory. In cats the success of lavage was found to depend on the amount of carbolic acid given, the time of lavage, and the solutions used. After small, though lethal, doses, washing out the stomach thoroughly with either plain water or a concentrated solution of sodium sulphate on the appearance of convulsions (three to five minutes after ingestion) saved the animals in most cases. Lavage with solutions of alcohol was followed by death more often than by recovery. After large doses of carbolic acid prompt lavage with alcohol was followed almost invariably by death, plain water also failed, but solution of sodium sulphate gave the best results—survival for a time or recovery. After later lavage with alcohol or plain water the animal invariably died, but after lavage with sodium sulphate it occasionally recovered. Dogs withstood carbolic acid better than cats, and could be saved by immediate lavage irrespective of the medium used. After larger doses immediate lavage with sodium sulphate or plain water sometimes saved the animal, while lavage with alcohol was almost always followed by death. In late lavage (about 15 minutes after ingestion) sodium sulphate gave the best results and plain water the next, while the use of alcohol was almost invariably followed by death. Dr. Macht agrees with Tauber that sodium sulphate does not act chemically, but by hindering absorption and possibly also by purgation. Magnesium sulphate can be used for the same reasons, but the possible depressing effect of the magnesium ions in case of absorption is a disadvantage. Further experiments showed that animals which had previously been poisoned with alcohol withstood carbolic acid better than others. Possibly this was due to the greater affinity of the alcohol for the nerve cells which prevented the carbolic acid from acting on them. On the other hand, alcohol given after ingestion of carbolic acid simply promotes absorption, as it is an excellent solvent of the latter. This is confirmed clinically, for of 10 cases mentioned by Falck in which carbolic acid was taken in various alcoholic drinks 9 were fatal, whereas in 17 in which the acid was simply taken by mistake 13 were fatal. The point is important, for the recommendation of alcohol as an antidote to carbolic acid is to be found even in text-books.

NYSTAGMUS AND LABYRINTHINE STIMULI.

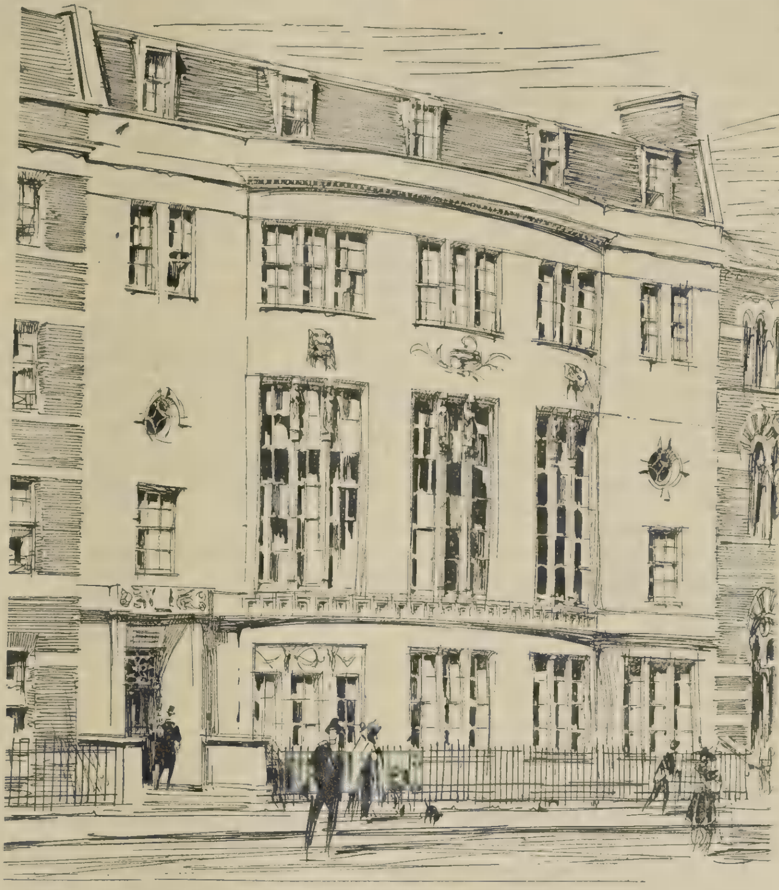
FOR nearly two decades the problems connected with the physiology and pathology of the association of eye movements—nystagmus—and labyrinthine stimuli have attracted the attention of aurists, neurologists, and physiologists. Of later years the tracts along which these impulses pass from the ear to the eye, as well as a clearer and more definite localisation of the nerve centres which receive these impulses, have been the subjects of careful investigation. But at the same time much speculative matter has been put forward, some based on most ill-defined premisses. All good earnest scientific work is to be welcomed, the more so on account of the speculative character of much modern teaching. Dr. J. Gordon Wilson and Dr. F. H. Pike have recently given us a very important contribution on this matter, a series of laboratory experiments dealing with the afferent and efferent tracts of the stimuli and their effects. These are to be found in the records of the American Otological Society, this particular paper being delayed by the fact that the illustrations were being reproduced on the continent of Europe. The value of the experiments appears to be great, showing amongst other things that "lesions of the cerebral hemisphere on the side of the slow deviation of the eyes abolish or reduce the quick component."

THE Seventh International Congress for Obstetrics and Gynæcology, which was to have taken place this autumn in New York, will not be held on account of the political situation existing in Europe. The American committee has decided to postpone the date of meeting of the Congress until September, 1917.

THE NEW BUILDINGS OF THE GENERAL MEDICAL COUNCIL.

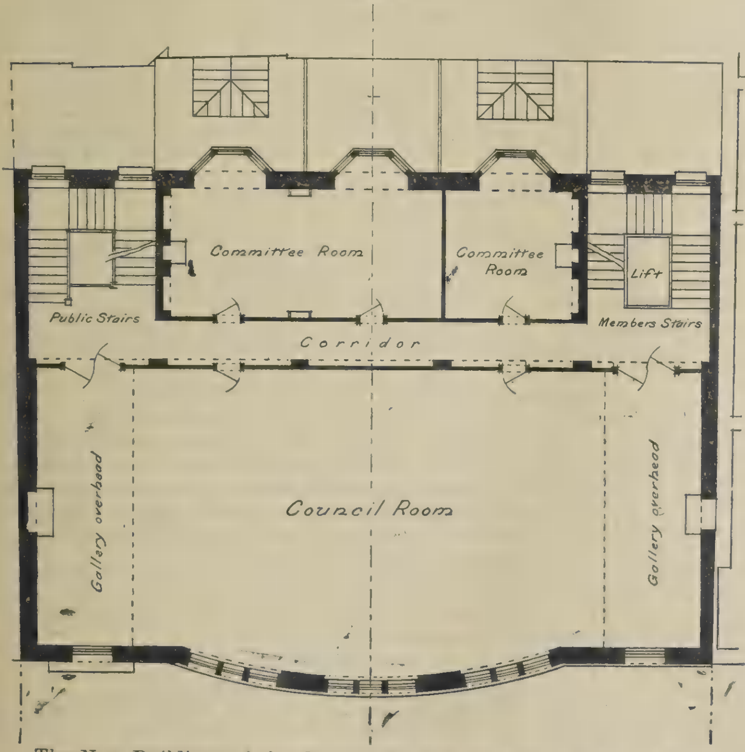
THE first meetings of the General Medical Council took place at the Royal College of Physicians of London, and subsequently a registration office was opened in Soho-square. In 1874 the Council obtained from H.M. Office of Works the premises at 299, Oxford-street, which were formerly occupied by the Royal College of Chemistry, and in 1895 the Council purchased the freehold of the site and of the ground behind it, which runs through to 16, Hanover-square. For some time it has been considered that it would be advantageous to dispose of the Oxford-street site if a suitable one could be obtained elsewhere. Not only might the Council's income be thereby increased, but it would be possible to put up a new building more suitable to the Council's requirements. Although a council chamber had been built on and a storey added to the old building, the premises were by no means convenient. Not only was the office accommodation inadequate, owing to the large extension of the membership and work of the Council, but during the session it was quite impossible to provide proper rooms for the legal advisers, the medical profession, the witnesses, and such members of the general public who may be present during the proceedings.

FIG. 1.



The New Buildings of the General Medical Council: Front elevation.

FIG. 2.



The New Buildings of the General Medical Council: First-floor plan.

The Oxford-street portion of the site has now been disposed of, and a new site has been taken on the Howard de Walden estate in Hallam-street, which lies between Portland-place and Great Portland-street, parallel to these two thoroughfares. The street is one which has no direct openings at either end, and is therefore not much used for through traffic. The whole of it is now being rebuilt, and in about three years' time, with the exception of the Council's building and the Jewish Synagogue next door, it will consist of residential flats. The new building has been designed by Mr. Eustace Frere, A.R.I.B.A., of 1, Lincoln's Inn-fields, and the contractors are Messrs. Chinchen and Co.

The front elevation is shown by Fig. 1. The front is of Portland stone, with a central bay extending nearly to the full height of the building. On entering the visitor will find himself in a large hall, round which are the registration office, rooms for the President and Registrar, and separate cloak rooms and lavatories for the members of the Council and the public. At each end of the building is a staircase, one of these being for the public and the other for members. A lift is also provided for members, who thus have access to all parts of the building independently of the passages intended for the public, except in the entrance hall itself. The Council chamber extends the full width of the building on the first floor, and in rear of it are two committee rooms; one of these can be subdivided by a movable partition and retiring rooms for complainants, defendants, and the legal profession will thus be provided. The Council chamber occupies in height the space of two floors; there will be a gallery at either side of it and the room will be panelled in oak. On a mezzanine floor at the back of the upper part of the Council room are two large committee rooms on a level with the galleries; these will provide accommodation for the press when the Council sits *in camerâ*. Above this again is a members' luncheon room and a smoking room, together with another committee room, and at the top are quarters for the caretaker. The war has caused a great rise in the cost of building materials and labour, and it has therefore been found necessary to postpone the installation of some of the decorative features in the original design, such as the panelling of the Council chamber, but it is hoped that these may be added in a few years' time.

The new building will probably be occupied before the end of this year, but the next two sessions are likely to take place in the Oxford-street premises.

REPORT OF THE ADVISORY COMMITTEE FOR THE TROPICAL DISEASES RESEARCH FUND FOR 1914.[1]

AS was pointed out last year when commenting upon the annual report for 1913, the advisory committee of the Tropical Diseases Research Fund, which was constituted by the Secretary of State for the Colonies in 1904, continues to be greatly hampered in its good work by the insufficiency of its financial resources. The income for 1914 amounted to £3745, of which the Imperial Government contributed £1000 and the Government of India £500, the remainder being made up by contributions from the Dominion and Colonial Governments. The expenditure was £4250, so that there was an excess of £505 on the wrong side. This deficiency had again to be made up by drawing upon the accumulated balance of the fund which is now reduced to £750; so that this method of meeting the annual deficiency must soon come to an end.

The Expenditure of the Fund.

The expenditure comprised a grant of £1450 to the London School of Tropical Medicine; of this amount, £1200 were expended in payment of salaries and the maintenance of the laboratories of the teachers and investigators of helminthology, protozoology, and entomology, £250 being also given as a contribution towards the investigation of schistosomiasis carried out by Dr. R. T. Leiper in the Far East. The Liverpool School of Tropical Medicine received £1200, of which £500 were spent on research work on trypanosomiasis, £250 on research work on parasitology and helminthology, £250 on entomological research, and £200 on malaria investigation. A sum of £850 was given to the University of London, £750 of which was expended in paying the salary of the professor of protozoology, and on the application of the University £100 were granted towards the salary of the professor's scientific assistant, Dr. H. M. Woodcock. To the University of Cambridge £750 were paid, £100 of which were given in respect of the research studentship in medical entomology, £100 towards the salary of an assistant to the Quick professor, £100 towards the payment of a helminthologist, £50 towards the salary of a demonstrator in medical entomology, and £100 for the general expenses of the Quick laboratory. A special grant of £300 was made towards the expenses of sending Dr. E. Hindle to Uganda and Nyasaland to carry out research work there, but owing to the war the expedition was postponed, and the £300 will remain earmarked for this work.

Statistical Returns.

Appended to the report are the statistical returns received from certain colonies and protectorates with regard to mosquito-borne diseases, supplied in accordance with the circular of the Secretary of State dated Dec. 20th, 1910. Reports are also appended of the work done by the London and Liverpool Schools of Tropical Medicine and reports of the professor of protozoology in the University of London and his assistant; also a report by Professor G. H. F. Nuttall on the work done in the Quick Laboratories. Certain reports on work done at various colonial laboratories are also appended, and one by Dr. Louis W. Sambon on Dermatobia hominis in the West Indies, where he has been recently conducting inquiries. By arrangement a résumé of the Annual Report of the Gordon College Research Laboratories at Khartoum is likewise included.

Reports on Antimalarial Measures in the Crown Colonies and Protectorates, &c.

These reports are preceded by a note furnished by Professor Sir Ronald Ross on the Prevention of Mosquito-borne Diseases in the Colonies, along with a suggested form of return. The colonies, the reports of which are printed in the appendix, include the Windward Islands (St. Vincent), Hong-Kong, the British Solomon Islands Protectorate, South Africa, the Leeward Islands (Antigua, St. Kitts-Nevis, Dominica, and Montserrat), Nyasaland, the Straits Settlements, Zanzibar, Mauritius, the Northern Territory of Australia, and Trinidad. The committee observe with satisfaction that these reports have been prepared with great care, and they call special attention to the valuable reports supplied by Hong-Kong, Zanzibar, and the Straits Settlements.

Report of the Professor of Protozoology, London University.

The work of Professor E. A. Minchin included further researches, with the assistance of Dr. J. D. Thomson, on Trypanosoma lewisi and its immediate host the rat-flea, the complete memoir of which, embodying all the results and fully illustrated, has been sent to the *Quarterly Journal of Microscopical Science* for publication. A résumé of the report, however, is given by Professor Minchin, and this is divided into three parts. Part I. contains an introduction and a description of the technique employed, and the anatomy and histology of the flea. Part II. contains the results of the observations made, and Part III. the results of the experiments carried out. The development of the trypanosome in the flea is described, as also the experimental results with regard to the transmission by the flea and other kindred problems.

Report by Dr. H. M. Woodcock.

Dr. Woodcock, assistant to Professor Minchin, reports on the work done by him during the year ended June 30th, 1914, under the headings of (1) Research and (2) Assistance to the Professor and in the Department. Under the first he deals with flagellates occurring in the common British mosquito, Culex pipiens, and as to the second he refers to demonstrations which he gave in connexion with Professor Minchin's course of lectures on the Protozoan Parasites of Man. Dr. Woodcock also rendered considerable assistance to the workers in the laboratory.

Report on the Work of the Quick Laboratory, Cambridge.

Professor Nuttall gives an account of various papers to the number of 10 published by workers in this laboratory during the year, and incidentally mentions that the work of his department has been greatly disturbed by the war. A number of his students and assistants have obtained commissions and are serving in the army. One has been killed in the fighting which took place in Nyasaland. Miss Porter, D.Sc., has resigned her post of helminthologist upon her appointment to a Beit Memorial Scholarship.

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[1] Report of the Advisory Committee for the Tropical Diseases Research Fund for the Year 1914. Presented to both Houses of Parliament by command of His Majesty. London. 1915. Printed under the authority of H.M. Stationery Office. Pp. 248. Price 2*s.* 3*d.*

Report of the London School of Tropical Medicine.

This includes reports by the entomologist, the helminthologist, and the protozoologist, for the two half-years ended Oct. 31st, 1914, furnished respectively by Lieutenant-Colonel A. Alcock, I.M.S. (retired), Dr. R. T. Leiper, and Dr. C. M. Wenyon. Dr. Leiper's report is addressed from China, whither he had gone as Wandsworth scholar, accompanied by Surgeon E. L. Atkinson, R.N., for the purpose of studying the mode of spread of trematode infections of man, especially bilharziasis, a special report on which is given and further particulars promised later. Dr. Wenyon has resigned his post, and has been succeeded by Dr. J. Gordon Thomson, formerly of the Liverpool School of Tropical Medicine. The operations of the London school have been much disturbed by the war and by the departure of some of the teachers who have joined the forces in the field.

Report of the Liverpool School of Tropical Medicine.

In this are contained reports by Professor J. W. W. Stephens, Professor R. Newstead, and Professor Warrington Yorke, and by Dr. H. B. Fantham and Dr. B. Blacklock, of the work done in their various departments. A summary of the scientific papers contributed by members of the staff of the school is appended. At the Runcorn Laboratories Dr. Blacklock has been engaged for some time upon investigations in connexion with Trypanosoma cruzi, the South American trypanosome of man. As this parasite is transmitted by a reduvid bug experiments were made to ascertain if the common bed-bug might also act as a carrier of this disease. Dr. Fantham among other researches continued his investigations on bronchial spirochætosis.

Report from the Wellcome Research Laboratories, Khartoum.

This report deals with the work carried out by the Bacteriological Section, and that by the Entomological Section concerned with subjects of interest in tropical medicine, after the resignation of Dr. Andrew Balfour, C.M.G., and under the directorship of Dr. Albert J. Chalmers.

Observations on the Life History of Dermatobia Hominis.

Dr. Louis W. Sambon, in the course of a recent visit to the West Indies, found opportunities for examining several cases of cutaneous myiasis in man and animals. He also collected some interesting information regarding the bionomics of Dermatobia hominis, a warble-fly, the larva of which is a common parasite of man in certain regions. His observations were made in Colombia, British Guiana, and Trinidad, and his report, which is illustrated, makes very interesting reading. He appends to it a long list of references on the subject.

Reports on Work Carried out in Colonial Laboratories.

The report from the Institute for Medical Research, Kuala Lumpar, Federated Malay States, among other things deals with beri-beri, leprosy, and blackwater fever from the scientific standpoint, and as an "annexure" Dr. H. Fraser and Dr. W. Fletcher furnish a contribution on "The Bacillus Lepræ: Has it been Cultivated?"[2] The Hong-Kong Bacteriological Institute supplies a report on investigation of the mosquitoes in that colony, in which the stegomyia fasciata is definitely stated to be present, especially on the Kowloon side of the harbour. Dr. Aldo Castellani gives a report on the very varied and valuable work carried out by him at the Clinic for Tropical Diseases and at the Bacteriological Institute, Ceylon. Lastly, Dr. H. Harold Scott presents an interesting report for the year ending Sept. 30th, 1914, on the work done at the Pathological Laboratory, Public Hospital, Kingston, Jamaica.

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[2] THE LANCET, Sept. 27th, 1913, p. 918.

DONATIONS AND BEQUESTS.—By the will of the late Sir James Rankin, first baronet, of Bryngwyn, Hereford, the testator bequeathed £1000 to the Herefordshire General Hospital.—The Royal Westminster Ophthalmic Hospital has received from the trustees of the Zunz Bequest a further donation of £300.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned have been granted temporary commissions as Surgeons in His Majesty's Fleet: Stanley Ninian Wright (dated June 3rd), Harold Oliver Martin (dated June 4th), Charles Milwyn Burrell (dated June 5th), Gerald William Mooney, and John Arnold Fairer.

The following appointments have been notified:—Fleet-Surgeon: H. J. Hadden to the *President*. Temporary Surgeons: M. Fawkes and H. H. Gellert to the *President*, J. T. E. Evans and G. W. Mooney to the *Pembroke*, and J. A. Fairer to the *Victory*, the two last-named officers for Chatham and Haslar Hospitals respectively; J. Lambert to hospital ship *Rewa*, and J. S. Kennedy to the *Monarch*.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Ebenezer Snell has been promoted to the rank of Honorary Staff Surgeon. Surgeon: C. S. McK. Murison to the *Vivid*, additional, for R.N. Barracks at Devonport.

ROYAL ARMY MEDICAL CORPS.

Captain Douglas S. B. Thomson is placed on the Half-pay List on completion of 10 years' service with the Egyptian Army (dated April 20th).

Lieutenant John F. Hutton relinquishes his temporary commission on account of ill-health (dated March 26th).

Lieutenant John P. Brown relinquishes his temporary commission (dated May 10th).

The undermentioned are granted temporary honorary rank whilst serving with the British Red Cross Society in France:—As Lieutenant-Colonel: Leonard Nicholas Robinson (dated June 6th). As Major: Charles George Jarvis (dated June 6th). Sir David Hardie to be temporary Major (dated April 4th). Captain John Charles Davies, 4th Battalion, The Royal Welsh Fusiliers, Territorial Force, to be temporary Major whilst employed with the Field Ambulances of the 43rd Division (dated May 12th).

Alfred Wills to be temporary Lieutenant whilst serving with the British Red Cross Hospital, Netley (dated June 7th).

The undermentioned to be temporary Majors: Major Robert Thomas Hughes, Welsh Divisional Train, The Army Service Corps (dated May 17th). Major Nathaniel Samuel Manning, 6th Battalion, The Devonshire Regiment (dated May 18th). Major Edward Burdett Pooley, 4th Battalion, The King's Own (Royal Lancaster Regiment) (dated May 19th). Arthur Neve (dated April 8th) and Philip Turner (dated May 18th). Richard Gundry Rows is granted temporarily the honorary rank of Major whilst doing duty at Moss Side Military Hospital (dated May 28th). Elwin Harral Thomas Nash to be temporary Major whilst employed at the Lord Derby War Hospital (dated March 24th).

The undermentioned to be temporary Captains: Henry Mainwaring Holt, Home Hospitals Reserve (dated April 27th). George Blacker (dated May 1st). Captain Sidney Herbert, from 9th (Service) Battalion, The Bedfordshire Regiment (dated May 14th). Captain Christopher Victor Bulstrode, Shropshire Royal Horse Artillery (dated May 18th) Dated May 20th: Temporary Lieutenant Godfrey M. Huggins and Temporary Lieutenant Lewis E. Barnett.

The undermentioned to be temporary Lieutenants:—Dated April 4th: Cuthbert Arnold Verge. Dated April 6th: Roger Orme Bridgman, Russell William Richards, and Charles Frederick Strange. Dated April 15th: Kerr Simpson and Thomas Dymock Kennedy. Dated April 22nd: Denis Fitzgerald O'Kelly. Dated April 25th: Horace Carlos Barr. Dated April 27th: Robert James Ledlie, Colin More Geddie, Frank Jubb, John Harry Hebb, John Bowes, Charles Coventry, Reginald Tom Cox, John Howe, William Ritchie Main, Alfred Hardman Mountcastle, William Francis Gordon Scott, and Arthur Sydney Webley. Dated April 28th: Oliver Heath, John McKenzie, Hassell Dyer Field, Walter Edward Cooper, Robert Hanham Cox, Charles Crerar, Stanley Denovan Adam, William Wallace, James Ash, Richard John Batty, John Harry Saunders, and Thomas Harold Phillips. Dated April 30th: John Joseph McConnell and William Sinclair Stevenson. Dated May 1st: William John Dunlop, Alexander Smith Allan, Michael Alfred McKeever, Sidney Ernest Holder, John Hamilton Hart, Norman Devereaux, John Harmer Drew, Reginald Wynyard Davies, George Edward Kinnersly, John Gawler Murray, John MacDonald, William George Ridgeway Macauley, John Purcell, George Mallock Bluett, John Lancelot Atkinson, Reginald Thompson Raine, Cecil Price Jones, Henry Harvey, William Albert Rogerson, Francis Bernard Chavasse, Michael John McCarthey, David Lindsay Hutton, Worsley John Harris, Stanley Allman Hall, Edgar Duesbury Wellburn, Richard Hugh Williams, James Cameron Turnbull, David Moodie, Joshua Bower Dalton, Cyril Mary Brophy, James Rae, Charles Edward Fenn, Leslie Fraser Eiloart Jeffcoat, Ernest George Sworder, Andrew Duffield Blakeley, Thomas Maitland Crawford, Augustus Lower Paliologus, Robert Hughes, Richard

Dowden, Henry Porter D'Arcy Benson, Martin Ashley, William Kenneth Bigger, George Barthorpe Simpson, Guy Verney Fletcher, William Stewart Stolker, William Robert Watt, Alexander Duncan, Roland Danvers Brinton, Henry Hugh Rose Clarke, Arthur Matthey, George Douglas Kerr, Edward Patrick Carey, George Stephen Ware, James Francis Wolfe, Samuel Wyborn, Roy Mackenzie Stewart, Henry Spinks, Thomas Forbes Brown Reid, Frederick William Rowland, Clayton Campbell Harris, Thomas Henry Harker, Montagu David Eder, Robert Park, Eliot Watson Blake, Bernard Pickering, Harold Heafford Proudfoot, James Thomas Macnamara, Archibald George Kirwood Ledger, Alan Randle, Robert Alexander MacKenzie Macleod, Benjamin Henry Shaw, Howel Gabriel Gwyn Jeffreys. Dated May 2nd: Percy Haycroft Berry. Dated May 10th: Lewis Edward Barnett. Dated May 15th: John Macqueen, from Royal Field Artillery.

The following officers have been appointed to command Station Hospitals in India:—Lieutenant-Colonel C. F. Wanhill, Poona; Lieutenant-Colonel H. G. F. Stallard, Colaba; Lieutenant-Colonel W. B. Winkfield, Murree; Lieutenant-Colonel F. Ashe, Agra; and Major L. L. G. Thorpe, Ranikhet. Lieutenant-Colonel S. F. Rennie (retired) has been re-employed and ordered to assume command of the Station Hospital at Chakrata. The following transfers have been ordered:—Lieutenant-Colonel C. F. Wanhill from the 5th Division to the 6th Divisional Area; Lieutenant-Colonel W. B. Winkfield from the Burma to the 2nd Division; Lieutenant-Colonel H. G. F. Stallard from the 5th Division to the 6th Divisional Area; Lieutenant-Colonel F. Ashe from the 9th Division to the 7th Divisional Area; Major L. L. G. Thorpe from the 9th Division to the 7th Divisional Area; and Captain L. Murphy from the 9th to the 4th Division.

Indian Medical Service.

Lieutenant-Colonel to be Colonel: Charles Mactaggart, C.I.E. (dated March 29th).

Captains to be Majors: Dated Feb. 28th: Robert Kelsall, Charles Hildred Brodribb, John McCallum Anderson Macmillan, Clifford Allchin Gill, Richard Francis Steel, Arthur Charles Ingram, Ernest William Charles Bradfield, and John Brown Dalzell Hunter.

Lieutenants to be Captains:—Dated Oct. 22nd, 1914: Harry Slater Cormack, Edward Slade Goss, and George Blenkhorn Harland. Dated Jan. 27th: Ronald Herbert Candy, Philip John Veale, Jamasji Cursetji Bharucha, Henry Hingston, Heerajee Jehangir Manockjee Cursetjee, Frederick Jasper Anderson, Peter Fleming Gow, John Simson Stuart Martin, Robert Victor Morrison, James Walker Jones, J. Chandra Dey, and James Hall Hislop.

The promotion to their present rank of Majors Henry Ross and Leonard Hirsch is antedated from July, 1914, to January, 1914, and of Majors John O'Leary, Cuthbert Lindsay Dunn, and Raghber Dayal Saigol is antedated from September, 1914, to March, 1914.

The King has approved the retirement of Surgeon-General George Francis Angelo Harris, C.S.I., K.H.S. (dated April 1st).

The King has approved the promotion of Temporary Lieutenant James Robert Hall Walker to Temporary Captain (dated Dec. 22nd, 1914).

Special Reserve of Officers.

Supplementary to Regular Units or Corps: Royal Army Medical Corps.—Cadet Sergeant Eric Jamieson, from the Edinburgh University Contingent, Officers Training Corps, to be Lieutenant (on probation).

Territorial Force.

Army Medical Services.

Lieutenant-Colonel Francis E. Fremantle, from Sanitary Service, to be Deputy Assistant Director of Medical Services, East Anglian Division, vice Major E. C. Freeman, who vacates the appointment.

Royal Army Medical Corps.

The undermentioned to be Captains, whose services will be available on mobilisation: Alfred Herbert Horsfall, D.S.O. (late Major, Australian Medical Corps), Matthew John Stewart, and Herbert James Macvean.

Harold Dobson Pickles (late Cadet, Leeds University Contingent, Senior Division, Officers Training Corps) to be Lieutenant.

1st Southern General Hospital: Frederick William Ellis to be Lieutenant-Colonel (temporary), whose services will be available on mobilisation.

1st London (City of London) Sanitary Company: Vincent Philip Norman (Lieutenant, Indian Medical Service) to be Lieutenant.

1st South-Western Mounted Brigade Field Ambulance: Lieutenant Ivan C. Keir to be Captain.

3rd Home Counties Field Ambulance: William Walker Maxwell to be Lieutenant.

3rd East Lancashire Field Ambulance: Lieutenant Kingsmill W. Jones to be Captain and to remain seconded.

5th London Field Ambulance: Lieutenant-Colonel Edward Lloyd-Williams, from the Territorial Force Reserve, to be Lieutenant-Colonel (temporary).

5th Northern General Hospital: Alfred Ernest Payne to be Captain, whose services will be available on mobilisation.

North Midland Mounted Brigade Field Ambulance: Robert Hargreaves (late Cadet Sergeant, Cambridge University Contingent, Senior Division, Officers Training Corps) to be Lieutenant.

Notts and Derby Mounted Brigade Field Ambulance: Captain Oswald Kentish Wright to be temporary Major.

South-Eastern Mounted Brigade Field Ambulance: William Tresawna to be Lieutenant.

Yorkshire Mounted Brigade Field Ambulance: Captain Charles H. Bullen, from Attached to Units other than Medical Units, to be Captain.

3rd Highland Field Ambulance: Alexander Reid Moodie (late Second Lieutenant, St. Andrews University Contingent, Senior Division, Officers Training Corps) and Alexander Brown Jamieson to be Lieutenants.

1st Lowland Field Ambulance: Alexander Graham Buchanan to be Lieutenant.

1st Eastern General Hospital: Henry Samuel Crichton Starkey to be Captain, whose services will be available on mobilisation.

4th London General Hospital: Edward Bellis Clayton to be Captain, whose services will be available on mobilisation.

2nd Northern General Hospital: John Kay Jamieson to be Major (temporary) on the permanent personnel.

1st East Lancashire Field Ambulance: Lieutenant John Bruce to be temporarry Captain.

2nd Welsh Field Ambulance: Lieutenant Charles W. C. Myles to be Captain.

1st Western General Hospital: Major James M. Beattie, from 3rd Northern General Hospital, to be Major. Edgar Stevenson to be Captain, whose services will be available on mobilisation.

2nd Western General Hospital: Judson Sykes Bury (late Major in this Unit) to be Major.

3rd Western General Hospital: Gilbert Innes Strachan to be Lieutenant.

Attached to Units other than Medical Units.—Surgeon-Major Arthur C. Oldham, from 2nd South Midland Brigade, Royal Field Artillery, to be Major. Captain Arthur C. Bird, from the Territorial Force Reserve, to be Captain. Captain Haldinstein D. Davis is restored to the establishment. Lieutenant Cecil W. Rowntree to be Captain, and to remain seconded. George James Elliot Trotter to be Lieutenant.

Deaths in the Services.

Deputy Surgeon-General Henry Joseph Rose, formerly in the 2nd (Queen's) and West Yorkshire Regiment, at a nursing home in London on June 2nd, aged 82. He joined the Army Medical Service in 1855 and saw service in the Crimea (medal with clasp and Turkish medal). He also took part in the China War of 1860 (medal with two clasps) and in the Afghan War of 1878–80 (medal). He retired in 1881.

Surgeon-General George William Robertson Hay, I.M.S., formerly principal medical officer of the Madras Command, on May 27th, at a nursing home in Edinburgh, aged 70. He retired from active service a few years ago.

Deputy Surgeon-General Christopher Joynt, I.M.S. (retd.), suddenly on June 4th, at the advanced age of 87. Born in Ballina, Co. Mayo, and educated in Queen's College, Galway, within a few years of its opening, he entered the Indian Medical Service and went to India shortly after the Mutiny. He served in the Persian Expeditionary Force in 1857, with the Okamandel and Kattywar Field Forces, 1859–60, and in the Abyssinian Campaign. He was for some time professor of midwifery in Bombay and was principal medical officer of the Quetta District. Since his retirement he has lived in Dublin, devoting himself to philanthropic and religious work. He was greatly interested in the study of theology. He was until recently a constant attendant at the meetings of the Royal College of Physicians of Ireland, of which he was a Fellow. Of late years his sight was failing, but he had unusually good health for a man of his age. Two of his sons are in the medical profession, one practising in Fiji and one in South Africa.

Indian Medical Service Promotions.

Consequent on the suspension during the war of examinations for promotion, lieutenants with less than three years' service will be promoted to the rank of captain on completion of that term of service, irrespective of whether they have passed the prescribed examinations or not, provided they are qualified in all other respects. Lieutenants who have already completed three years' service and who have not passed, or have failed to pass, will be promoted as from Oct. 22nd, 1914, the earliest date on which they could have presented themselves for examination in the ordinary course, provided they are certified to be fit for promotion in all other respects. Lieutenants who have not been able for approved reasons to present themselves for examination will be dealt with under the ordinary rules. Promotions made under these orders, which have been issued by the Government of India, will be regarded as provisional, subject to the officers passing the required examination at the first opportunity on the restoration of normal conditions.

THE ROYAL NAVY LIST.

A second edition of the Royal Navy List, containing a special war supplement bringing the records of men and ships up to date (May, 1915), has just been issued. The alphabetical arrangement of this book, as regards the services of the personnel, greatly facilitates ready reference. A current history of the Royal Navy, the events of the war, and a summary of ships' services and commissions are other useful features of this publication. Messrs. Witherby and Co., 326, High Holborn, London, are the publishers, and the price is 7*s*. 6*d*.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 7337 births and 4756 deaths were registered during the week ended Saturday, May 29th. The annual rate of mortality in these towns, which had been 15·5, 14·2, and 15·4 per 1000 in the three preceding weeks, declined in the week under notice to 13·7 per 1000 of the average population estimated at 18,136,180 persons at the middle of last year. During the first eight weeks of the current quarter the mean annual death-rate in these towns averaged 16·6, against a corresponding rate of 17·1 per 1000 in London. The annual death-rate in the week under review ranged from 4·3 in Lincoln, 5·9 in Bath, 6·0 in Wallasey, 6·4 in Hornsey, and 6·5 in Acton, to 20·9 in Huddersfield, 21·3 in Halifax, 22·1 in Barrow-in-Furness, 22·9 in South Shields, and 24·7 in Middlesbrough.

The 4756 deaths from all causes were 584 fewer than the number in the previous week, and included 439 which were referred to the principal epidemic diseases, against 484 and 603 in the two preceding weeks. Of these 439 deaths, 221 resulted from measles, 90 from whooping-cough, 64 from infantile diarrhœal diseases, 31 from diphtheria, 21 from scarlet fever, 11 from enteric fever, and 1 from small-pox. The mean annual death-rate from these diseases was equal to 1·3, or 0·4 per 1000 less than in the previous week. The deaths attributed to measles, which had been 276, 238, and 309 in the three preceding weeks, fell to 221, and caused the highest annual death-rates of 1·8 in Coventry, 1·9 in Dewsbury, 2·0 in Sunderland, 2·3 in Northampton, 3·0 in West Bromwich, 3·3 in South Shields, 3·4 in Sheffield, 6·1 in Walsall, and 6·6 in Middlesbrough. The deaths referred to whooping-cough, which had been 121, 105, and 137 in the three preceding weeks, declined to 90 in the week under notice, and included 18 in London, 6 each in Liverpool and Wigan, 5 in Birmingham, and 3 in South Shields. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 67, 57, and 70 in the three preceding weeks, fell to 64, of which 13 were registered in London, 5 in Liverpool, and 3 in Barrow-in-Furness. The deaths attributed to diphtheria, which had been 51, 48, and 51 in the three preceding weeks, declined to 31, and included 6 in London and 3 in Birmingham. The deaths referred to scarlet fever, which had declined from 34 to 20 in the four preceding weeks, were 21 in the week under review, of which 4 occurred in London and 2 each in Northampton and Wigan. The fatal cases of enteric fever, which had been 12, 11, and 15 in the three preceding weeks, fell to 11, and included 3 in Manchester and 2 each in Stoke-on-Trent and Liverpool. The death from small-pox was registered in Bristol.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2384, 2332, and 2286 at the end of the three preceding weeks, further fell to 2252 on May 29th; 257 new cases were admitted during the week, against 307, 270, and 320 in the three preceding weeks. These hospitals also contained on the aforementioned date 1089 cases of diphtheria, 126 of measles, 51 of enteric fever, 11 of whooping-cough, and 1 of small-pox. The 1139 deaths from all causes in London were 149 fewer than in the previous week, and corresponded to an annual death-rate of 13·1 per 1000. The deaths referred to diseases of the respiratory system, which had steadily declined from 469 to 212 in the six preceding weeks, further fell to 182 in the week under notice, but were 17 in excess of the number registered in the corresponding week of last year.

Of the 4756 deaths from all causes in the 96 towns 252 resulted from different forms of violence and 353 were the subject of coroners' inquests, while 1412 occurred in public institutions. The causes of 40, or 0·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Hull, and in 72 other smaller towns. Of the 40 uncertified causes of death, 10 were registered in Birmingham, 5 in Liverpool, 3 each in Stoke-on-Trent and Darlington, and 2 each in London, Gillingham, Bootle, and Sheffield.

In the 96 English and Welsh towns 9202 births and 4847 deaths were registered during the week ended Saturday, June 5th. The annual rate of mortality in these towns, which had been 14·2, 15·4, and 13·7 per 1000 in the three preceding weeks, rose in the week under notice to 13·9 per 1000. During the first nine weeks of the current quarter the mean annual death-rate in these towns averaged 16·3, against a corresponding rate of 16·7 per 1000 in the metropolis. The annual death-rate last week ranged from 4·6 in Reading, 6·2 in Walthamstow, 6·4 in Hornsey, 6·6 in Ealing, and 6·8 in Enfield, to 20·8 in Rotherham, 23·7 in Carlisle, 23·9 in Middlesbrough, 27·6 in Sunderland, and 28·2 in Gillingham.

The 4847 deaths from all causes were 91 in excess of the number in the previous week, and included 489 which were referred to the principal epidemic diseases, against 603 and 439 in the two preceding weeks. Of these 489 deaths, 239 resulted from measles, 90 from whooping-cough, 75 from infantile diarrhœal diseases, 50 from diphtheria, 22 from scarlet fever, and 13 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·4, against 1·3 per 1000 in the previous week. The deaths attributed to measles, which had been 238, 309, and 221 in the three preceding weeks, rose to 239 last week, and caused the highest annual death-rates of 2·1 in Derby, 2·2 in Walsall, 2·6 in Stockton-on-Tees, 3·2 in Barrow-in-Furness, 4·1 in Sunderland, 4·2 in Sheffield, 4·5 in Middlesbrough, and 5·3 in West Bromwich. The deaths referred to whooping-cough, which had been 105, 137, and 90 in the three preceding weeks, were again 90 last week, and included 23 in London, 9 in Liverpool, 4 in Birmingham, and 3 each in East Ham, Manchester, and South Shields. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 57, 70, and 64 in the three preceding weeks, rose to 75 last week, of which 15 occurred in London, 7 in Manchester, 5 in Sheffield, and 4 each in Birmingham and Liverpool. The deaths attributed to diphtheria, which had been 48, 51, and 31 in the three preceding weeks, rose to 50 last week, and included 13 in London, 5 in Northampton, and 3 in Norwich. The deaths referred to scarlet fever, which had been 25, 20, and 21 in the three preceding weeks, were 22 last week, of which 7 were registered in London, and 2 each in Warrington and Manchester. The fatal cases of enteric fever, which had been 11, 15, and 11 in the three preceding weeks, rose to 13 last week, and included 2 each in Bristol and Manchester.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had declined from 2384 to 2252 in the four preceding weeks, had increased to 2267 on Saturday last; 327 new cases were admitted during the week, against 270, 320, and 257 in the three preceding weeks. These hospitals also contained on Saturday last 1091 cases of diphtheria, 110 of measles, 50 of enteric fever, 11 of whooping-cough, and 1 of small-pox. The 1151 deaths from all causes in London were 12 in excess of the number in the previous week, and corresponded to an annual death-rate of 13·3 per 1000. The deaths referred to diseases of the respiratory system, which had steadily declined from 469 to 182 in the seven preceding weeks, were 181 last week, and were 2 in excess of the number recorded in the corresponding week of last year.

Of the 4847 deaths from all causes in the 96 towns, 227 resulted from different forms of violence, and 344 were the subject of coroners' inquests, while 1468 occurred in public institutions. The causes of 45, or 0·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Leeds, Bristol, West Ham, Bradford, Hull, and in 71 other smaller towns. Of the 45 uncertified causes, 8 were registered in Liverpool, 7 in Gillingham, 5 in Birmingham, 4 in Sunderland, 3 each in Warrington and Gateshead, and 2 each in Preston and Barrow-in-Furness.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns, with an aggregate population estimated at 2,345,500 persons at the middle of this year, 1075 births and 818 deaths were registered during the week ended Saturday, May 29th. The annual rate of mortality in these towns, which had declined from 20·2 to 16·1 per 1000 in the four preceding weeks, rose to 18·2 per 1000 in the week under notice. During the first eight weeks of the current quarter the mean annual death-rate in these towns averaged 18·8, against a corresponding rate of 16·6 per 1000 in the large English towns.

Among the several towns the death-rate in the week under review ranged from 10·1 in Paisley, 10·2 in Kirkcaldy, and 11·3 in Motherwell, to 20·7 in Leith, 22·1 in Perth, and 23·7 in Aberdeen.

The 818 deaths from all causes were 94 in excess of the number in the previous week, and included 145 which were referred to the principal epidemic diseases, against numbers declining from 150 to 90 in the four preceding weeks. Of these 145 deaths, 72 resulted from measles, 43 from whooping-cough, 15 from infantile diarrhœal diseases, 10 from diphtheria, and 5 from scarlet fever, but not one from enteric fever or from small-pox. The mean annual death-rate from these diseases was equal to 3·2, against a corresponding rate of 1·3 per 1000 in the large English towns. The deaths attributed to measles, which had been 47, 49, and 36 in the three preceding weeks, rose to 72, and included 53 in Glasgow, 13 in Aberdeen, and 4 in Falkirk. The deaths referred to whooping-cough, which had declined from 82 to 40 in the four preceding weeks, rose to 43, and comprised 25 in Glasgow, 5 each in Edinburgh and Aberdeen, 4 in Dundee, 3 in Hamilton, and 1 in Leith. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 15, 9, and 5 in the three preceding weeks, rose to 15, and included 3 each in Glasgow and Dundee, and 2 each in Edinburgh, Aberdeen, and Motherwell. The deaths attributed to diphtheria, which had been 7, 8, and 2 in the three preceding weeks, rose to 10, of which 5 occurred in Glasgow. The 5 fatal cases of scarlet fever included 3 in Glasgow and 2 in Aberdeen, and were 2 below the average in the earlier weeks of the quarter.

The deaths referred to diseases of the respiratory system, which had been 118, 121, and 117 in the three preceding weeks, rose to 141 in the week under notice, and were 45 in excess of the number recorded in the corresponding week of last year. The deaths attributed to violence numbered 26, against 26 and 21 in the two preceding weeks.

In the 16 largest Scotch towns 1171 births and 848 deaths were registered during the week ended Saturday, June 5th. The annual rate of mortality in these towns, which had been 17·9, 16·1, and 18·2 per 1000 in the three preceding weeks, further rose to 18·9 per 1000 in the week under notice. During the first nine weeks of the current quarter the mean annual death-rate in these towns averaged 18·8, against a corresponding rate of 16·3 per 1000 in the large English towns. The annual death-rate last week ranged from 10·9 in Ayr, 11·7 in Leith, and 11·8 in Coatbridge, to 20·9 in Dundee, 21·0 in Glasgow, and 21·8 in Aberdeen.

The 848 deaths from all causes were 30 in excess of the number in the previous week, and included 147 which were referred to the principal epidemic diseases, against 90 and 145 in the two preceding weeks. Of these 147 deaths, 85 resulted from measles, 40 from whooping-cough, 10 from infantile diarrhœal diseases, 7 from scarlet fever, and 5 from diphtheria, but not one from enteric fever or from small-pox. The mean annual death-rate from these diseases was equal to 3·3, against 1·4 per 1000 in the large English towns. The deaths referred to measles, which had been 49, 36, and 72 in the three preceding weeks, further rose to 85 last week, and comprised 70 in Glasgow, 4 in Aberdeen, 3 each in Dundee, Kirkcaldy, and Clydebank, and 2 in Perth. The deaths referred to whooping-cough, which had been 45, 40, and 43 in the three preceding weeks, fell to 40 last week, and included 20 in Glasgow, 5 each in Edinburgh and Dundee, 4 in Aberdeen, and 2 in Kilmarnock. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 9, 5, and 15 in the three preceding weeks, fell to 10 last week, and included 4 each in Glasgow and Dundee. The 7 deaths referred to scarlet fever, of which 3 occurred in Glasgow and 2 in Aberdeen, were equal to the average in the earlier weeks of the quarter. The fatal cases of diphtheria, which had been 8, 2, and 10 in the three preceding weeks, fell to 5 last week, but showed no excess in any of the towns.

The deaths referred to diseases of the respiratory system, which had been 121, 117, and 141 in the three preceding weeks, further rose to 145 in the week under notice, and were 46 in excess of the number in the corresponding week of last year. The deaths attributed to violence numbered 35, against 21 and 26 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,212,380 persons at the middle of this year, 653 births and 382 deaths were registered during the week ended Saturday, May 29th. The annual rate of mortality in these towns, which had been 19·9, 18·8, and 18·3 per 1000 in the three preceding weeks, further fell to 16·4 per 1000 in the week under notice. During the first eight weeks of the current quarter the mean annual death-rate in these towns averaged 20·1, against corresponding rates of 16·6 and 18·8 per 1000 in the English and Scotch towns respectively. The death-rate in the week under review was equal to 17·0 in Dublin (against 13·1 in London and 19·7 in Glasgow), 16·9 in Belfast, 19·0 in Cork, 16·5 in Londonderry, 17·6 in Limerick, and 7·6 in Waterford, while in the 21 smaller towns the mean death-rate was 14·4 per 1000.

The 382 deaths from all causes were 43 fewer than in the previous week, and included 20 which were referred to the principal epidemic diseases, against numbers declining from 41 to 24 in the five preceding weeks. Of these 20 deaths, 10 resulted from measles, 4 from infantile diarrhœal diseases, 3 from whooping-cough, and 1 each from enteric fever, scarlet fever, and diphtheria, but not one from small-pox. The mean annual death-rate from these diseases was equal to 0·9, against corresponding rates of 1·3 and 3·2 per 1000 in the English and Scotch towns respectively. The deaths attributed to measles, which had been 10, 4, and 9 in the three preceding weeks, were 10 in the week under notice, of which 5 occurred in Belfast and 3 in Dublin. The deaths of infants (under 2 years) referred to diarrhœa and enteritis, which had declined from 10 to 4 in the four preceding weeks, were again 4, and comprised 3 in Belfast and 1 in Wexford. The fatal cases of whooping-cough, which had been 9, 10, and 5 in the three preceding weeks, further fell to 3, of which 2 were registered in Belfast and 1 in Dundalk. The deaths from enteric fever and diphtheria were recorded in Dublin, and that from scarlet fever in Belfast.

The deaths referred to diseases of the respiratory system, which had been 76, 82, and 93 in the three preceding weeks, fell to 63 in the week under notice. Of the 382 deaths from all causes, 120, or 31 per cent., occurred in public institutions, and 9 were attributed to different forms of violence. The causes of 11, or 2·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the large English towns the proportion of uncertified causes did not exceed 0·8 per cent.

In the 27 town districts of Ireland 645 births and 396 deaths were registered during the week ended Saturday, June 5th. The annual rate of mortality in these towns, which had declined from 19·9 to 16·4 per 1000 in the four preceding weeks, rose to 17·0 per 1000 in the week under notice. During the first nine weeks of the current quarter the mean annual death-rate in these towns averaged 19·8, against corresponding rates of 16·3 and 18·8 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 19·0 in Dublin (against 13·3 in London and 21·0 in Glasgow), 16·7 in Belfast, 15·6 in Cork, 20·2 in Londonderry, 23·0 in Limerick, and 15·2 in Waterford, while in the 21 smaller towns the mean death-rate was 13·0 per 1000.

The 396 deaths from all causes were 14 in excess of the number in the previous week, and included 27 which were referred to the principal epidemic diseases, against numbers declining from 41 to 20 in the six preceding weeks. Of these 27 deaths, 12 resulted from infantile diarrhœal diseases, 5 each from scarlet fever and whooping-cough, 3 from measles, and 2 from diphtheria, but not one from enteric fever or from small-pox. The mean annual death-rate from these diseases was equal to 1·2, against corresponding rates of 1·4 and 3·3 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had declined from 10 to 4 in the five preceding weeks, rose to 12 last week, and comprised 8 in Dublin, 3 in Belfast, and 1 in Cork. The 5 deaths referred to scarlet fever were 3 in excess of the average in the earlier weeks of the quarter, but showed no excess in any particular town. The fatal cases of whooping-cough, which had been 10, 5, and 3 in the three preceding weks, rose to 5 last week, of which 3 occurred in Dublin. The deaths attributed to measles, which had been 4, 9, and 10 in the three preceding weeks, fell to 3 last week, and included 2 in Dublin and 1 in Belfast. The fatal cases of diphtheria were recorded in Dublin and Belfast.

The deaths referred to diseases of the respiratory system, which had been 82, 93, and 63 in the three preceding weeks, fell to 56 in the week under notice. Of the 396 deaths from all causes, 128, or 33 per cent., occurred in public institutions, and 12 resulted from different forms of violence. The causes of 12, or 3·0 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 English towns the proportion of uncertified causes did not exceed 0·9 per cent.

THE death is announced of Dr. Alfred Hollis of Freshwater, Isle of Wight. Dr. Hollis qualified in 1867 as L.S.A., taking the M.R.C.S. in 1868, the M.B., C.M. of Edinburgh in 1869, and proceeding to the M.D. degree of that university in 1873. He had been civil surgeon in charge of the Royal Engineers at Fort Victoria, and medical officer of health of Yarmouth, Isle of Wight. He was a friend of Tennyson, and one of his medical attendants.

Correspondence.

"Audi alteram partem."

THE METROPOLITAN HOSPITAL SUNDAY FUND: THE APPEAL OF THE LORD MAYOR OF LONDON.

To the Editor of THE LANCET.

SIR,—May I, as president and treasurer of the Metropolitan Hospital Sunday Fund, remind your readers that on Sunday next, June 13th, they have their annual opportunity of showing practical sympathy with the work of our London hospitals.

This year the need is greater and the call clearer than ever, for, in addition to the ordinary work of healing the sick poor, the hospitals have nursed and cared for many thousands of our brave sailors and soldiers, and the doctors and nurses now at "the front" would readily tell how much of their knowledge they owe to hospital training in London.

Every man restored fills a gap in the line; every contribution, therefore, is a help towards victory.

I will gladly receive and acknowledge any sums sent to me by those who cannot be at their place of worship next Sunday.

I am, Sir, your obedient servant,
CHARLES JOHNSTON,
Lord Mayor.

The Mansion House, London, E.C., June 10th, 1915.

As chairmen respectively of the Committees of Distribution, General Purposes, and Finance we warmly support the Lord Mayor's appeal.

(Signed) A. S. CHURCH,
DAVID ANDERSON,
C. ERNEST TRITTON.

THE WAR AND THE SUPPLY OF MEDICAL OFFICERS.

To the Editor of THE LANCET.

SIR,—I was glad to see that in the leading article of your issue of June 5th you have taken up the question of the supply of medical officers in connexion with the war. The experience gained so far by the War Emergency Committee of the Metropolitan Counties Branch of the British Medical Association shows very definitely enormous difficulties in the way, and much might be written on the curious anomalies which have come to the notice of the committee. But the essential question is to prepare a scheme for what you rightly describe as the "mobilisation of the whole profession."

There are only three ways in which the supply of medical officers for the army can be made good: (1) by voluntary recruiting; (2) by compulsory service; (3) by the importation of foreigners.

Compulsory service is probably the most satisfactory solution; but conscription is a political question at present, and however likely it may seem in the future, it must not be counted upon at present. The importation of foreigners would not only cast a slur on the British profession, but might also very well lead to unsatisfactory conditions when the Royal Army Medical Corps officer comes to work side by side with the foreigner at the front.

Can voluntary recruiting satisfy the requirements? To my mind it can, but only under certain conditions, of which the first and most important is that all the different bodies concerned in war service should be in touch with one another. The medical authorities of the War Department are supreme in dealing with officers actually in the army; but they cannot know anything about civilian practice. Therefore they must be in close touch with a body representative of every side of medical practice. Such a representative body should include hospital men, general practitioners, officials of societies such as the Red Cross, and a layman or so to voice the sentiments of the patriotic philanthropist who has placed private hospitals and other such facilities at the disposal of the Government. This body needs a central office and clerical assistance in order that records may be kept. Every medical man should be recorded, with his age and the service for which he is suitable. Every hospital should be noted with its staff and the number of medical men required for its working. When fresh men are required for any service the War Department should communicate with this office, whereupon a list of suitable names would be submitted, from which the war authorities would select the number of men they require. In this way overlapping, over-work, and the over-staffing of hospitals, especially with men of unsuitable age, might be avoided.

To get anywhere near an ideal arrangement of this kind two things are necessary, both in individuals and in bodies of men—(1) the avoidance of jealousy; and (2) the recognition of one's limitations. Much of the difficulty of the present situation is due to jealousy between different bodies, and between individual men. The lack of recognition of one's limitations is shown at the War Office by the attempt to deal in an unorganised way with a body of civilian practitioners of which the department knows nothing; it is shown by the civilian practitioners in attempting to dictate conditions in a matter on which they are ignorant—the organisation of the R.A.M.C.; by the military and civil hospitals, and by the Red Cross Society, which are run without any coördination or settled line of action with regard to their junior staffs and other points.

To me it appears that none of these troubles can be adjusted except through a central bureau, clearing house, exchange, or whatever it may be called. To form such a body and to have it accepted, recognised, and used by the War Department and by everyone interested in the successful organisation of the medical profession, is the idea I suggest; and if ever the suggestion is adopted I would implore all parties to forget their petty jealousies, to recognise their individual limitations, and to work in a united manner for the achievement of success.

I am, Sir, yours faithfully,

Inverness-terrace, W., June 7th, 1915. CHAS. BUTTAR.

THE EFFECT OF ATROPINE IN "GASSED" PATIENTS.

To the Editor of THE LANCET.

SIR,—I was glad to read Dr. Ida C. Tengely's letter on this subject in your issue of June 5th, in that her experiences afford a certain confirmation of the suggestion that atropine is beneficial to those suffering from the effects of irritant gases.

I should like to criticise, if I may, her suggestion for using atropine as a prophylactic measure against such gases. Surely the "tightness of the chest" or bronchial spasm produced by such irritants is Nature's way of attempting to lessen the amount of these gases inhaled, and consequently to reduce to a minimum the damage to the respiratory apparatus. It follows that the administration of atropine prior to exposure to such gases, by paralysing the broncho-dilator nerve endings, would effectually prevent the slightest degree of broncho-constriction; in other words, a widely dilated air-passage would be ready to receive large inhalations of the irritant fumes. Consequently the damage to the respiratory apparatus would be likely to be increased.

On the contrary, *after* the irritant gases have been inhaled, the air passages being full of an inflammatory exudate and a certain degree of bronchial spasm being present, the subject experiences a "tightness of the chest"—a difficulty in forcing air into the lungs, and probably a still greater difficulty in expelling the CO_2 from the lungs. By relieving the spasm and opening out the air passages to their widest possible calibre atropine is of the greatest value in relieving the distressing and exhausting symptoms.

May I add the fervent hope that if Dr. Tengely has the misfortune to be in the proximity of a 'gas cloud," she will for her own sake keep her dose of atropine until the cloud has passed.

I am, Sir, yours faithfully,
DOUGLAS COW.

Pharmacological Laboratory, Cambridge, June 7th, 1915.

THE MANAGEMENT AND TREATMENT OF YAWS EXEMPLIFIED BY TWO CASES.

To the Editor of THE LANCET.

SIR,—The usual method, as far as I know, of dealing with yaws cases in the tropics in the British West Indies is more or less similar in every one of the islands. There is a faithful similarity among the management and reports that savours strongly of a slavish attachment to red-tapeism and an utter lack of originality. Segregation is the chief object desired, and ordinances are passed from time to time to drive yaws-infected patients to special hospitals, where they reside from three months to three years under treatment, while some are quite satisfied to make the hospital their permanent homes. I cannot say that I have seen anywhere in the British West Indies signs of any vigorous and scientific interest in the management of yaws-infected persons. There have been from time to time spasmodic revivals of interest taken in the disease, but soon to subside into the humdrum routine and indifference that is characteristic of everything West Indian. I have known a case of yaws return from the hospital after a year's residence showing well-marked nodules. It is with a view, if possible, to revive an active interest in this disease that I venture on the publication of this protest, for I feel sure that working on right lines the stamping out of yaws is a measure not only possible but extremely probable. It has already been noted that the prevalency of yaws in the British West Indies is on the decrease, but nobody, I think, has given a thought to the proper reason for this happy result. It has not been brought about by the efforts of the different governments, which if anything are a drawback to its ultimate eradication, nor has it been effected by the successful scientific treatment of yaws cases admitted yearly in the hospitals instituted for that purpose. Those who know and have watched the progress of these West Indian Islands cannot have failed to observe the simultaneous advance of scientific agriculture and the gradual decrease of the disease known as yaws. There is no room to doubt that from the moment that agriculture took on a rational and scientific turn there was an appreciable decrease in the incidence of the disease. This is remarkably exemplified in the small island of Grenada, where the brush has been applied to some advantage. The squatters attached to estates in that island, who lived anyhow and whose wages of 1*s.* a day were hardly sufficient to maintain the ordinary needs of life, were removed, and agriculture was pushed on a scientific and business-like manner, and almost immediately the prevalency of yaws declined. Grenada is now, I believe, ready to apply the remedy to a section of her population by reclaiming estate lands wherewith to dump her surplus population in a fresh and cleanly made peasantry. In that island the authorities take some interest in the poorer section of the people.

With regard to the treatment of yaws, the system of routine has even been more marked. Since the advent of the spirochætæ the contagiousness of yaws seems to have been adopted universally as an admitted fact, yet, in my humble opinion, there has never been a greater mistake made. Syphilis is constantly being confounded with yaws, which I venture to think is purely and simply a non-contagious skin disease. There is no difficulty in demonstrating the spirochæta pallida of syphilis, and it does not require an expert to do that. I have repeatedly done so, and showed it to intelligent people who took an interest in such matters, yet not once have I been able to obtain the organism of yaws. I cannot see why the one should be more difficult to obtain than the other under the ordinary methods prescribed. The virtues of arsenical preparations as the specific treatment in yaws are not new, and I, years ago, strongly suggested it as the only drug which can be depended upon for a speedy cure of the disease. The coming of salvarsan as a specific treatment in yaws is somewhat of a misfortune, if only for this reason, that the drug has been used too indiscriminately and without technical knowledge on the part of the operators. A second reason is that a very much less dangerous preparation of arsenic, intelligently used, can have the same effect, without endangering the life of the patient. The wholesale injection of salvarsan for the cure of yaws in incompetent hands cannot be too strongly deprecated, while the routine habit of injecting every patient on admission, whether able to bear the remote effects of such a powerful remedy or not, is extremely dangerous. A couple of cases which have come under my notice would suffice to show the carelessness evinced in the use of salvarsan in the routine treatment of yaws.

CASE 1.—A girl aged 17 to 18 years, the only help to poor and hardworking parents. She contracted yaws and was by the ordinance forced to go to a yaws hospital, where she received two injections of "606." On her return from the hospital, apparently in good health, she returned to her gardening. On the sixth day of her return home she was taken with chills, fever, and "bursting" headache. She appeared to be drowsy or dozed, her tongue was protruded slowly and with difficulty, and she could not, or would not, answer questions. I procured two ounces of her urine by catheterisation. I ordered her an immediate hot bath, to be followed by grain doses of calomel and soda every hour for six hours. I found the sample of urine to be highly albuminous, and there seemed no doubt as to the diagnosis. About 6 P.M. on the same day I found her comatose, having, just before my arrival, had severe convulsions. I then opened the right median basilic vein and let out five ounces of blood, but to no purpose; she died during the night. There was no reason to suppose that the girl showed any signs of kidney disease before her sojourn in the hospital, but that she succumbed to acute uræmia following upon almost complete suppression of urine there can be no room for doubt. I have not the least doubt that the injection of salvarsan received constituted the chief cause of her kidney trouble and her death.

CASE 2.—A little girl, aged 5 years, who had had crabs in the sole of her left foot for two years. She was sent to the yaws hospital where she received an injection of "606" on admission. The site of the puncture was in the left buttock and immediately over the course of the great sciatic nerve. She came to me eight months after the injection for fever and an enlarged spleen, but noticing that she dragged her left leg and had a peculiar gait, I got from the mother the history of the treatment at the yaws hospital. When she left the yaws hospital her left leg was dragging and painful, and there was a lump of about the size of a small Tangerine orange at the site of the puncture. Her mother, observing a small aperture at the top of the swelling, squeezed, and suddenly there spurted out about a teaspoonful or more of matter. The swelling subsided gradually but the left leg and foot remained weak, and she has never been able to regain her proper gait since the operation, it being now over eight months. Here, then, is a child, crippled for life by the inadvertency of a careless operator. What has occurred is fairly obvious, and the damaged nerve is likely to be a source of trouble for the balance of this child's life.

I venture to think that if all the cases of yaws treated with salvarsan were to be systematically examined the statistics of failures would be found to be far greater than the average of successes published in the reports, or the calamities attendant on its use would be so alarming as to demand an immediate check on the indiscriminate use of such a powerful remedy.

I am, Sir, yours faithfully,

Port of Spain, Trinidad, B.W.I. A. B. DUPREY.

ELECTRIC TREATMENT IN ARTERIO-SCLEROSIS.

To the Editor of THE LANCET.

SIR,—With reference to your abstract of a very able article on arterio-sclerosis by Dr. W. Lyne Blight in THE LANCET of June 5th, in the paragraph which treats of the treatment of this condition there is no mention made of the value of electric current. It is generally conceded by those who have any knowledge of electricity as a therapeutic agent that it has the power of modifying pathological arterial tension. The headache, which is present when the sclerosis affects the cerebral vessels, can usually be instantly relieved by the proper application of electricity, and there occurs coincidentally with this a fall in the pressure as registered by the sphygmomanometer. Very often the instrument will register a drop of 20 millimetres in 15 minutes with the patient feeling more cheerful and in better temper. At the same time there is evidence of increased oxidation, the output of the urea is increased, and that of uric acid diminished—that is to say, nitrogenous matter becomes more completely oxidised.

Of the various modalities the current of D'Arsonval is the most efficacious. The manner in which it is applied varies with the operator, some, especially the French physicians, preferring the auto-condensation cage, whereas in America the auto-condensation couch is more general; both give equally good results, provided that a current of sufficient ampèrage be employed, say, 1000 milliampères, which is not difficult, provided that the coil and condensers are of sufficient capacity and a multiple spark-gap be put in circuit. The current may be passed for 10 to 15 minutes, or until the patient flushes or the skin becomes moist. The treatment should be given daily, or thrice weekly, according to the nature of the case and the readiness or otherwise with which the patient responds to the treatment. Frequent reading of the sphygmomanometer should be taken as a guide to the treatment. Headache and a feeling of lassitude are sometimes noted after one or two treatments. These are due to the fact that in consequence of the rapid tissue change induced by the treatment more toxins are liberated than can be carried off. These facts will be more marked should constipation be present and altogether avoided if the bowels are kept freely opened.

I have been using this method for over 10 years and can confidently speak to its beneficial effects, and feel that no monograph or article dealing in arterio-sclerosis or a raised arterial tension is complete without a reference to it.

I am, Sir, yours faithfully,

F. HOWARD HUMPHRIS, M.D.

West Chapel-street, Mayfair, W., June 8th, 1915.

PRODUCTION OF LACERATED WOUNDS BY POINTED RIFLE BULLETS.

To the Editor of THE LANCET.

SIR,—The essential factor which normally prevents a rifle bullet turning over in its flight in the air and during its passage through the denser semi-fluid tissues of the body is that it has a certain rate of spin which bears a definite relationship to the forward velocity. This rate of spin depends, of course, on the number of turns which the grooves of the rifling make in the barrel. If this rate of spin is greatly too fast or too slow for the forward velocity, then the bullet will wobble in its flight and eventually turn over, thus producing a lacerated wound. Now the forward velocity of a bullet diminishes very rapidly owing to the resistance of the air to its flight, but the rate of spin is diminished hardly at all, since as the bullet has a smooth surface it meets with hardly any air resistance, and there being therefore almost nothing to slow it, it naturally keeps on spinning at practically its original rate. To give an instance. It is well known that carefully balanced tops have been constructed which will spin for over half an hour, whereas the bullet has only got to maintain its rate of spin for, at most, a few seconds. The result is that the relationship between the rate of spin and the forward velocity is upset, the former becoming too great proportionately for the latter, and the bullet then has a tendency to turn over and thus produce a lacerated wound.

A bullet which makes a clean entrance wound may produce laceration inside the body both for the above reason and also for another—namely, that a rate of spin which correctly corresponds to the forward velocity in the air may be quite incorrect in the denser semi-fluid medium of the body. This explains also the remarkable changes of direction of track of the bullet in the body, which may occur sometimes even apart from striking a hard structure. Generally speaking the blunter a bullet is, the less tendency has it to turn over in its flight either in the air or in the body—that is to say, the more pointed a bullet is the more closely has its rate of spin got to approximate to that which is absolutely correct in order to keep it steady and point foremost during its flight as well in the air as in other media such as the body. This explains the much greater frequency with which the pointed bullet is found to have turned over and thus produced lacerated wounds, than was the case with the old round-nosed bullet.

I am, Sir, yours faithfully,
FRANCIS H. KELLY, M.B., B.S.,
Resident Medical Officer, King George Hospital.
June 1st, 1915.

THE TREATMENT OF GAS POISONING.

To the Editor of THE LANCET.

SIR,—When the effects of asphyxiating gas on our soldiers were first reported I suggested to an eminent surgeon at the front the use of oxygen by subcutaneous injection for those with much obstruction in the respiratory passages. He was so good as to send a reply as follows: "We have tried oxygen subcutaneously in several cases as you propose. It has seemed to be useful and we shall continue to try it, for it is right to try everything one possibly can."

As we may, from bomb-dropping, have to deal with similar conditions in this country, I hope the method may be borne in mind. It has been used for some years in France and Canada[1] in many forms of dyspnœa, including those in which inhalation is impeded mechanically. The technique is simple, all that is needed being a cylinder of oxygen, a piece of rubber tubing, and a hypodermic or small aspirating needle. If the tube is not clean a little wool or gauze might be put as a filter into the end near the needle. The disconnected needle is inserted anywhere into loose subcutaneous tissue —e.g., in the flank. If it have entered a vein, as shown by blood issuing, it should be taken out and inserted elsewhere. Oxygen is turned on at low pressure and the cylinder joined up to the needle. When a swelling such as would be produced by 300 c.c. (10 fl. oz.) of normal saline has slowly appeared the proceeding is repeated in another place, the first swelling being gently massaged to aid diffusion. 1·5 litre (say 54 oz.) has been injected altogether and repeated twice in the same day. It is, however, not necessary to measure the amount. No ill-effects have been recorded, nor even inconvenience, whilst in many cases immediate and considerable relief is stated to have occurred.

I am, Sir, yours faithfully,
J. D. MORTIMER, M.B., F.R.C.S.,
Anæsthetist, Royal Waterloo Hospital, &c.
St. John's Wood, N.W., June 3rd, 1915.

MILITARY HONOURS.

To the Editor of THE LANCET.

SIR,—Ignorant alike of the legal position of those important gentlemen called coroners, in respect to soldiers who die in England from wounds received in France, and of military etiquette with regard to the funerals of such victims, I shall be grateful for information upon the various points which I raise.

A soldier, wounded near Ypres, was admitted into the French Hospital, London, where beds have been placed at the disposal of the War Office. Shortly after admission he developed tetanus, from which, in spite of all that we could do, he died. The registrar refused to certify the death without the coroner's approval, and this was, I understand, only obtained after much time, criticism, and correspondence; but before reaching, with apparent reluctance, the happy conclusion that no inquest was necessary, he telegraphed to the only relation the unfortunate man possessed, a sister, a young girl aged 16, in service in Bath, asking if she was satisfied with the treatment received by her brother while in the hospital, a form of "compliment" which the staff of the hospital, who did everything in their power for the patient, properly appreciated.

Owing to the attitude of the coroner there was considerable delay in arranging the details of the man's funeral. At last, all being in order, nearly a week after his decease, a hearse, a corporal, and some twelve soldiers, arrived to take him away. No Union Jack was provided, but the hospital authorities were able to remedy this omission. On arriving at Kensal Green, however, no arrangements had been made for the services of a clergyman, and it was not until three-quarters of an hour had elapsed that the unfortunate man's remains were buried—without "military honours" in the true sense. All the wounded soldiers in the hospital were aware of these omissions—if omissions they were—and their comments were various and free.

It would be interesting to know whether other coroners practise similar proceedings and pay such delicate compliments to other hospitals, and whether these are the usual arrangements approved of by the War Office. Surely it would be possible for the War Office, the coroner, and the hospital authorities to work in conjunction with one another, so that such a state of things could not occur again.

I am, Sir, yours faithfully,
W. H. CLAYTON-GREENE,
Surgeon to the French Hospital.
June 5th, 1915.

THE PULSUS ALTERNANS.

To the Editor of THE LANCET.

SIR,—In THE LANCET of May 29th Dr. C. O. Hawthorne relates a case in which the pulsus alternans has been present on and off for five years without the manifestation of serious cardiac symptoms. The sphygmogram (Fig. 6) illustrating this case I believe answers Sir James Goodhart's question in your present issue, "When is a pulsus alternans not a pulsus alternans, so far as its now accepted gravity of prognosis goes?"

When interpreting tracings such as this it is important to remember that the respiratory muscles attached to the arm move the arm slightly during breathing if it is at all laboured. Unless the arm is kept still by grasping the condyles while the pulse is recorded, and particularly if the wrist apparatus of the sphygmograph is not securely fixed up, the movements of the arm modify the force of impact between the spring and button of the tambour, and thus cause variations in amplitude of the pulse-curves which are often mistakenly ascribed to changes in blood pressure. For example, if there are three pulses to one breath an apparent pulsus alternans may be occasioned, and with higher ratios the grouping of stronger and weaker beats may be such that one or two low beats alternate with two or three high beats. I have a number of tracings illustrating these fallacies, and the seeming alternation in Fig. 6 of Dr. Hawthorne's paper impresses me as being caused in this way. The outline of the curve, as a whole, suggests laboured breathing with a ratio of three pulses to each breath, and the weaker pulse of the groups of three occurs at the height of inspiration. Further, although the tracing is a close likeness, it is not a true picture of the pulsus alternans; one feature is alien—namely, the length of the downstroke of the weaker beat which equals the length of the downstroke of the stronger beat. In descriptions of the pulsus alternans hitherto given no mention is made of the relative length of the downstroke of the beats. To determine this relationship I have examined a large number of tracings, and I find in true pulsus alternans that although the downstroke of the weaker beat may be longer than its upstroke, it is never so long as the downstroke of the stronger beat. On these considerations I submit, with all deference, that the presence of true pulsus alternans in Fig. 6 cannot be accepted without demur.

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[1] See THE LANCET, June 22nd, 1912, p. 1726 (Anoxyhæmia of Altitude); Medical Press and Circular, May 1st, 1912, and Dec. 23rd, 1914; also Practitioner, July, 1911, p. 130.

With regard to the prognostic significance of pulsus alternans this has not been worked out, so far as I know, except in one group of cases—namely, when it occurs in association with myocardial and arterial disease in aged people. I published notes of a number of these cases in the *Quarterly Journal of Medicine*, July, 1913, and at that time ten of the patients were living; since, all except one have died, and none of the lot lived much over three years. In other conditions in which the pulsus alternans occurs present experience only warrants this conclusion, that it adds to the gravity of the outlook.

In my own experience it is not met with in rheumatic heart disease, or acute illnesses in the absence of other signs of danger.

I am, Sir, yours faithfully,

June 5th, 1915. J. DAVENPORT WINDLE.

THE GRATUITOUS TREATMENT OF DEPENDENTS.

To the Editor of THE LANCET.

SIR,—I think it is time, if conscription is approaching, for the profession to reconsider their attitude towards the wives and children of those men who are serving either at the front or training in Britain. The number is increasing daily, and is likely to go on doing so. At the present time we are not paid for the insured among these men—a considerable loss to those with a large panel list—and we appear to be in danger of having our practices still further decreased by a large increase in the number of "dependents."

There is no lack of loyalty in the writer of this letter; he has done his share so far, but the future has to be borne in mind. Loyalty will not feed the doctor and educate his family. There is no wish to pile extra burdens on those whose men are fighting for us, so surely this is a matter for Government to arrange.

I am, Sir, yours faithfully,

May 31st, 1915. M.D.

THE USE OF TRAINED NURSES FOR ORDINARY DUTIES.

To the Editor of THE LANCET.

SIR,—I have before me letters from two trained nurses at present serving in stationary hospitals with the Expeditionary Force. One takes spells of duty as cook and housekeeper, while the other has to cook her own meals and wash up afterwards. Both are thoroughly good nurses and both, I believe, are thoroughly bad cooks. I bring the matter forward in the hope that the authorities may be able to prevent such an apparently unnecessary waste of our nursing material. Trained nurses are scarce, but there are many experienced housekeepers, and the women of France have a deservedly high reputation as cooks.

I am, Sir, yours faithfully,

June 4th, 1915. H. B.

THE MEDICAL PROFESSION AND THE NEEDS OF THE ARMY.

To the Editor of THE LANCET.

SIR,—The doubtful manner in which the records of our naval and military successes, no less than of our failures, have reached us—the hesitation as to the real significance of any news vouchsafed—has been as bad almost as silence. Just as in general affairs it makes for good if as much information as is possible, having regard always to the military and political exigencies of the campaign, were published in clear language, so the medical man would be helped by definite information. No one knows better than he how seriously anxiety that is perhaps not justifiable, and puzzledom that need not exist, militate against the output of good work. As a whole we are an educated people, and the desire to understand before we act has increased among us. The feeling is there, and though its manifestations are sometimes inconvenient, it should not be ignored, for that only leads to its aggravation. The output of the munitions of war is stated to have been delayed and even now to be jeopardised by alcoholic habits in certain centres. The statement, while reiterated by some and flatly contradicted by others, has a basis of fact which we should think by this time has been exposed sufficiently to the nation. But the position might have been made clear sooner, when much ill-will would have been avoided, and possibly ready remedies for some of the evil would have been found already.

It seems still to be in doubt how far most stringent calls are yet to be made on the medical profession, and no definite guidance is given to the medical profession as to how such calls should be met. I am, Sir, yours faithfully,

SENEX.

SCIENCE IN CATALONIA.

To the Editor of THE LANCET.

SIR,—The book noticed last week under this heading may be taken to prove the vitality of the revival of the Catalan language, and we should all wish the revival success.

For small states and small nationalities have a precarious existence to look forward to, should the centralisation and unification of nations and countries so vigorously prosecuted by Germany gain any general adoption in Europe. The principle of nationality for which Germany stands is entirely averse from the employment of their native tongues or dialects by subject races, thus contrasting with the principle of encouraging national individuality practised by ourselves. At no period of her history has Spain produced many men of science of European reputation, a fact in striking contrast to her centuries of eminence in the fields of literature and art. Catalonia certainly gave birth to an alchemist of note in the thirteenth century—namely, Raymond Lully—if, indeed, it be not the case that the alchemical writings ascribed to him are forgeries of the fourteenth and fifteenth centuries. The present revival of the Catalan tongue undoubtedly gives an admirable opportunity for the revival of the study of science in Catalonia. May the opportunity be seized! I am, Sir, yours faithfully,

HISPANICUS.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

The Central Committee.

A meeting of the Central Committee was held on Thursday, June 3rd, when the members were put into possession of full details as to the distribution of relief to medical men, pharmacists, and their families and dependents in Belgium. This distribution takes place through the medium of the Aide et Protection aux Médecins et Pharmaciens Belges Sinistrés, extracts from whose recent official reports were published in The Lancet last week. The Belgian Committee works in this way. A strongly constituted central committee sitting in Brussels has appointed a subcommittee for eleemosynary purposes, and to this subcommittee inspectors report on the merits of the individual cases which have come under their ken in particular districts, and make recommendations as to what grants should be given. Papers are filled up for the information of the subcommittee, and the grants are made on the recommendations of the subcommittee, who are stated, on the whole, to have been less stringent than the actual inspectors. Examples of the kind of cases that have been succoured were published in The Lancet last week, and to these the following four cases may be added:—

Dr. C—— L——, of T——, is married, and has one dependent son. His money is exhausted, his premises are completely burnt, he has no means of daily subsistence, and an elder son with whom he hoped to shelter is now a refugee. A grant was made of 700 francs.

Dr. L——, of V——, has two dependent children, his house and all the contents have been burnt, and his economies are exhausted. A grant was made of 700 francs.

Dr. C——, of L——, has also two dependent children. His house and all the contents have been destroyed, and two other houses belonging to him have been burnt. His *clientèle* is ruined and dispersed. He still has some savings. A grant was made of 400 francs.

Madame G——, of A——, saw her husband and one son killed in front of her, and her house was pillaged. One son aged 15 remains. The returns of her late husband's pharmacy have become very small indeed. A grant was made of 700 francs.

At the séance of the Belgian Committee on April 29th an important departure was made, as it was agreed that monthly grants should be given to families of medical men and pharmacists in want. It was pointed out that it would be of great advantage to those who were helped if they had more security and had not always to renew their applications in the face of complete want. As a result it was agreed by the Aide et Protection aux Médecins et Pharmaciens Belges Sinistrés that allowances should be paid in suitable cases of from 300 francs to 600 francs per quarter. Already the distribution of three monthly allowances is being made to families of pharmacists. Complete accounts were furnished to the British Committee by the detailed reports of the proceedings at the séance of April 29th and the two previous sessions, so that it was possible to judge of two things: first, that the resources had been very closely husbanded; and, secondly, that more money is wanted, especially in view of the system of tri-monthly grants. Sir Rickman Godlee, the chairman of the British Fund, and Dr. Des Vœux, the treasurer, were accordingly authorised to send out a substantial sum of money to Belgium through the medium of Mr. Herbert Hoover, the chairman of the International Relief Fund. The cheque is being accompanied by a letter from the chairman of the British Central Committee, to Dr. Péchère, the chairman of the Aide et Protection aux Médecins et Pharmaciens Belges Sinistrés, pointing out that the British Committee cannot undertake to send the same amount monthly or even at stated intervals, but that the amount sent must depend partly on the funds at the disposal of the British Committee and partly upon the actual necessities of the time. In this letter the approval of the British Committee is also expressed of the way in which the relief of distressed doctors and pharmacists and their families has been undertaken by Dr. Péchère's committee.

The Week's Subscriptions.

The subscriptions received by Dr. Des Vœux up to Tuesday evening last, in addition to those previously acknowledged, are as follows:—

	£	s.	d.
Hampstead Division, B M.A. (per Dr. Coode Adams, Chairman and Sec.)	21	0	0
Dumfries and Galloway Division, B.M.A. (per Dr. J. Dewar Robson, Hon. Sec.)—			
Dr. R. B. Lorraine ...	1	1	0
Mrs. R. B. Lorraine ...	1	1	0
Dr. Cowan	0	10	6
Dr. Robson (supplementary)	0	9	9
Dr. W. Bramley Taylor	2	2	0
Brussels Medical Graduates Asso. (per Dr. Major Greenwood, Treas.) (eighth donation—total, £127 15*s.* 6*d.*)	1	1	0
Greenwich and Deptford Division, B.M.A. (per Dr. C. G. Wallis, Hon. Sec.) (second donation—total, £45 8*s.* 6*d.*)—			
Dr. Allan Massey ...	0	10	0
Dr. A. Whitehead ...	0	5	0
Mr. F. A. Williamson (from weighing machine)	0	6	6
Mr. A. Peake	2	12	9
Mr. J. W. Reed (per British Drug Houses, Ltd.)	2	2	0
Mr. John Cooper	0	10	6
Northamptonshire Division, B.M.A. (per Dr. Baxter, Hon. Sec.)—			
Dr. A. W. Cooke... ...	1	1	0
North of England Branch of Fund (per Dr. James Don and Mr. A. S. Perceval, Hon. Secs.) (thirteenth donation, total £709 15*s.* 6*d.*)—			
Dr. E. Gofton	1	1	0
Dr. J. R. Mitchell ...	1	1	0
Dr. C. Franks	1	1	0
Dr. W. Misselwhite ...	2	2	0
Dr. W. W. Stainthorpe	0	10	6
Dr. F. T. Hare	1	1	0
Dr. J. Danholm	1	1	0
Dr. J. Malcolm Shaw	4	0	0
Dr. J. W. Weir	1	1	0
Dr. W. H. Bishop ...	2	2	0
Dr. W. J. Phillips ...	1	1	0
Dr. F. F. Foster	2	2	0
Dr. G. R. Fortune ...	1	1	0
Dr. Craigie Gray ...	1	1	0
Dr. A. Pain	1	1	0
Dr. G. H. Harbottle ...	1	1	0
Dr. W. Horsfield ...	1	1	0

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham-gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Ltd.

The Appeal for Surgical Instruments.

The Master of the Society of Apothecaries begs to acknowledge the receipt of surgical instruments kindly contributed by the following donors since the publication of the last list:—

Mr. T. P. Beddoes, Welbeck-street, W.; Mrs. W. J. C. Johnstone. Weybridge; Mr. F. W. Smallwood, Handsworth; and Mrs. E. G. Roberts, Uxbridge.

Instruments should be sent to the Apothecaries' Hall, Blackfriars, E.C.

Centenarians.—Mr. John Mitchell, a Crimean veteran, has died at Navan, county Meath, in his 108th year. —The death has been reported in the borough of Stepney of a person aged 102.

Clean Milk Society.—The council of this society are preparing plans for an "infants' welfare" station in one of the poorest quarters of London, where clean milk can be sold to the poor and where mothers can be educated in the care of their young children, on similar lines to the work done in New York. The work of the society will embrace efforts to improve conditions at dairy farms, in railway transportation, and at milk shops, as well as the methods of distribution to consumers' houses and the care of milk in the home.

The War.

THE CASUALTY LIST.

THE names of the following medical officers have appeared in the casualty lists since our last issue:—

Wounded: Surgeon D. D. Pinnock, R.N. (Armoured Car Division), Captain K. B. MacGlashaw, Lieutenant J. T. Heffernan, Lieutenant J. S. Ward, Lieutenant R. O'Kelly, all of the R.A.M.C.; Captain J. J. Black, Australian Medical Corps; Temporary Surgeon J. R. Kay-Mouat, R.N.V.R., Home Battalion.

Missing: Lieutenant J. A. Gillespie, R.A.M.C. (attached 2nd Northumberland Fusiliers).

DEATHS AMONG THE SONS OF MEDICAL MEN.

The following name must be added to the sons of medical men who have fallen in the war: Lieutenant R. W. C. Edginton, only son of Dr. R. W. Edginton, of Edgbaston, Birmingham.

THE MOBILISATION OF THE MEDICAL PROFESSION.

The continuous increase in the number of medical men engaged with the fighting forces, which, whether voluntarily or by compulsion, will sooner or later have to be augmented to a degree greatly beyond anything that has yet been done, coupled with the considerable casualties sustained by the medical services, must inevitably drain the medical reserves of the country and deplete the ranks of the civil medical profession. Indeed, these results have already ensued to a considerable degree. But the making of doctors cannot be expedited as can the making of munitions, because no two or more processes in the moulding of the raw material can be carried out simultaneously. While 50 operatives could undoubtedly make a shell in less time than five, that is not the case with the making of a medical man. The consequence is that our supply of medical men cannot be expedited to meet the demand. For this reason also not only will the medical assistance required for the needs of the civil population be depleted, but as the war goes on the very strain thereof and the upset of those economic conditions on the stability of which the maintenance of a high state of individual efficiency depends will greatly increase the proportionate need for such assistance. While at all times prevention is infinitely more important than cure, the factors that tend to undermine the public health, and the evolution of conditions favouring the rise and spread of epidemic disease, are enormously increased during a prolonged war, as even a cursory study of history will demonstrate, so that undermanning of the sanitary service, whose duty it is to remove all causes and forestall all conditions that favour the spread of disease constitutes another problem of the first magnitude. A medical correspondent of the *Times* asks whether it may not be possible by a rearrangement of work to meet the demands and secure a margin of safety. Admitting the difficulties, he points out that while in the poorer-class districts the doctors are so fully occupied that no rearrangement is possible, in the suburban areas of large towns are to be found a considerable number of young men with comparatively little work, who are engaged in the building up of a practice. Such a practice when established represents invested capital, but, unlike the capital of an established commercial concern, it is almost purely personal, and is transferable in only a limited degree, tending to evaporate with the departure of the creating personality. Where, therefore, a practice is only in course of establishment it may be presumed that organised effort would have the effect of setting free a considerable number of such young men. The medical work might be centred in the hands of a few selected physicians already established there whose whole energies would be required, and thus a great waste of waiting time, which at present the nation cannot afford, would be obviated. The necessary adequate organisation might perhaps come through State intervention, for, among other things, it is clear that the assurance of some form of compensation on the recurrence of normal conditions would be necessary for those who have been dispossessed of their entire capital, which comprises mainly the time, labour, and money expended in the building up of an intangible and untransferable connexion, consisting of a personal attachment to themselves based on the estimate they have been successful in establishing of their own skill and capacity. Especially is this the case with those whose dependents have absolutely nothing outside of this on which to rely.

THE BRITISH CASUALTIES.

On Wednesday afternoon Mr. Asquith informed the House of Commons that the total British casualties in the French and Mediterranean Expeditionary Forces, including the Territorial, Overseas Dominions, and Indian contingents, up to the end of May comprised 10,955 officers and 247,114 non-commissioned officers and men killed, wounded, and missing. Of these, 3327 officers and 47,015 men have been killed. The figures, which do not refer to the navy, are not higher than had been anticipated by those who have followed the course of the war carefully, but they will serve to bring home to the public in a forcible and even heart-rending way the magnitude of the struggle in which the British Empire and our Allies are engaged. They also explain the urgent demand for medical assistance, and the need that this assistance, as it is forthcoming, should be used to the best advantage, every care being taken to see that full value is extracted from the supply.

THE TREATMENT OF WOUNDS IN WAR.

In the second number of the recently established *Journal of the Royal Naval Medical Service* appeared a paper detailing the results of a large number of experiments which had been conducted under the superintendence of a committee consisting of Sir William Watson Cheyne, Fleet-Surgeon P. W. Bassett-Smith, and Mr. Arthur Edmunds. The work of the committee dealt with the question of the prevention of the growth of septic organisms in a wound, and a very large number of experiments were made in order to investigate the rate of diffusion of various antiseptic substances through blood-clot, agar, and portions of tissue. Many very ingenious expedients were devised in order to test thoroughly the antiseptic value of various substances, and so much care was taken that the results may be accepted with confidence. The object of the investigation was to study the best method of dealing with wounds in the interval between the infliction of the wound and the arrival of the patient at a dressing station or field hospital, where the wound can be properly attended to—an interval not infrequently of several hours and sometimes even of days. The mere application of a field dressing over the wound, with or without cleansing of the surface or of the skin around, can have little effect on the spread of infection in the interior of the wound, though it will certainly tend to prevent the entrance of fresh infective material. It is clearly therefore desirable, if possible, to devise a method of inhibiting the growth of bacteria even in the depths of the wound. The material employed must be capable of diffusing through blood-clot, and to a certain extent also through the tissues, so that it may be capable of reaching the septic organisms which have invaded the wound. In the paper will be found a very full account of the experiments performed, and we need only mention their results. The committee decided that on the whole the most suitable antiseptic seemed to be a mixture of salicylic and boric acid, and that the most suitable application was a mixture of salicylic acid and boric acid, and that this was best applied as a powder to be dusted over the wounds thickly, while a cresol paste 20 per cent. in lanolin and wax base should be injected into the interior of wounds. The cresol paste is contained in paint tubes with nozzles two inches in length, so that it can be injected into the interior of the wound. So far the method has been employed only in a few cases in man, but it has been decided to make an extended trial of it, and therefore the material has been supplied to the navy. It is clear that it is only by an extended trial that the efficacy of the treatment can be established.

In the present issue of THE LANCET appears a rather trenchant criticism of the method by Mr. J. Godfrey Saner, who points out certain objections to its employment. The first objection is that the use of the paste prevents drainage, which is of so much importance in all septic wounds, and the second is that the method is not based on results obtained in actual wounds but on experiments in the laboratory. As to the interference with drainage, it may be said that the method does not inhibit the use of drainage tubes, and in fact in one case reported in the paper in which the method was employed a drainage tube was used. We fully agree that it is essential that in any deep wound there should be ample arrangement for drainage, otherwise the septic material is pent up and severe septic complications may result. The other objection, that the method is not based on the results in actual wounds, is puzzling, for the trial is being made, and the results will be examined with the greatest interest. The method has been elaborated with extreme care in the laboratory, and the names of the committee are a guarantee that the procedure suggested is at least based on careful experimental data. We know that Mr. Saner's views are not peculiar to himself, and, indeed, we have received communications to the same effect from others; but the probability is that there is not yet sufficient evidence forthcoming to warrant any decision.

Modifications in the Iodine Treatment of Wounds.

Dr. Douglas H. Stewart, a New York surgeon, has suggested employing as an agent in the treatment of wounds a combination of calomel and tincture of iodine in the proportion of 1 to 1000. The calomel forms iodide of mercury. For washing and dressing wounds 1 drachm of this solution is diluted to 2 ounces in water. The wound is cleaned and filled with the solution, toilet paper being employed for swabbing and, when folded and soaked with the solution, for draining. The wound is covered with soaked toilet paper, and over this a layer of dry toilet paper is placed and then bandaged with gauze or other material. It is claimed that toilet paper answers well for the purpose, inasmuch as it is porous and absorbent, and serves as an excellent draining medium; it does not adhere to the wound, and does not spread, curl, or unravel into threads. In aseptic procedure the wound is washed with the iodine-mercury solution, and drained with a strip of gauze fried in lard at a temperature of 175° C., and bandaged as usual. The following is the author's description of his technique.

> The advantage of having the gauze covering fried in lard is that lard can be brought to a very much higher temperature than water, and consequently germs and spores will be more surely destroyed. Also the gauze permeated with lard can be stripped off the wounds without causing pain and without injuring the surface of the wound and thereby impeding granulation and healing. This mode of treatment is applicable to all wounds which are infected and will be of great value in the present campaign. Success in treating wounds by this method has followed hospital practice.
>
> The combination intensifies the antiseptic action of the iodine without producing any escharotic effects. It appears that at the seat of war in France it is extremely difficult, in many cases impossible, to disinfect wounds thoroughly owing to the presence of anaerobes, such as the organisms of tetanus, malignant œdema, and B. aerogenes capsulatus. In particular wounds have been very frequently infected with the spores of tetanus. Most of the antiseptic agents employed are impotent against the organisms of tetanus, and if this combination will destroy the anaerobes it should be of the greatest service. There are three points to be considered. 1. The combination of calomel and iodine, making an antiseptic of greater strength by far than iodine alone. 2. The use of toilet paper as first dressing, it being non-adhesive, absorbent, and a good draining medium. 3. The practice of employing gauze boiled in lard up to a temperature of 347° F. as a first dressing, it being non-adhesive, and the temperature to which the lard can be raised being capable of killing germs and spores. The application of the ordinary tincture of iodine produces a tanning effect upon living tissue and affords a roof or shelter to anaerobes which may penetrate a little beyond the point of actual contact. The character of cases already treated resembles in many respects wounds produced in battle; of course, gunshot wounds being excepted.

The same surgeon, Dr. Douglas Stewart, referring to the method of treating infected wounds: (1) with hydrogen peroxide, (2) with tincture of iodine, and (3) bandaging with gauze pads and strips, says every one of these three steps may be improved upon. He uses sodium perborate in the place of hydrogen peroxide.

> A saturated solution of this salt (about 2½ per cent.) may be quickly made by adding to a cup or other vessel full of water a little greater quantity than can be dissolved, using the residue as an index of saturation, and this solution may be poured into a wound in the identical manner or mode that is employed with the use of H_2O_2. Effervescence is not synonymous with efficiency, and if the perborate solution yields rather less bubbling its well-known bactericidal effects would tend to prove that some of its gas was more profitably expended than merely escaping into the air. The solution is alkaline, but perishable. The powder form is, however, very stable. Consequently a small package (say, ¼ to ½ ℥) could be easily carried by each soldier. Sufficient of this could be dissolved in his cup, and the solution poured into the fresh wound by the man himself or one of his comrades, and the remainder of the treatment left for more skilful hands. The tincture of iodine, when applied to a wound in the same or a similar manner, burns like fire, it slows healing, and instead of affording protection against anaerobic infections seems rather to roof over and afford them shelter. Were our forebears so very far wrong in expressing approval of "laudable pus," because open septic wounds with abundant streptostaphylococcus overgrowth are not ideal homes for the germs of tetanus, but rather unfriendly or unfavourable environments?

Shuford's solution was planned for hypodermic use. Its formula is: Sod. bibor., acid. salicyl. aa ʒi., acid. carbolic. ʒiii., glycerin. ℥i. This is too strong for a wound application, though he has used it when all the conditions apparently (certain soils, toy pistol wounds, &c.) promised tetanus, but the wound will slough if it is applied more than once; consequently it has been modified to sod. bibor., acid. salicyl., acid. carbol., aa ʒiii., glycerin. ℥iss., aq. q.s. ad ℥ iv. The wound should be filled with this as it is germicidal, analgesic, and altogether an improvement over iodine.

The growth of granulations through the meshes of a gauze bandage renders sticking and tearing off necessary but uncomfortable accompaniments to its removal. Sheets of toilet paper (wood-pulp) may be folded or rolled into drains or lamp-wick shapes, the wound bridged diagonally or longitudinally with these which are to be roofed over with smooth sheets, and then gauze, put outside of and over all, will not stick, as there is a shield between it and the growing granulations; or if the paper does adhere it may be quickly softened and washed away by sponging with warm water and washing soda (¼ per cent.). Further attention is facile and agreeable to all concerned because removal has not caused additional trauma.

Military Hospitals at Milan.—A Swiss correspondent sends us an interesting description of Milan in war-time. "Milan," he says, "is preparing to receive and to look after the greatest possible number of wounded soldiers. Thanks to the generosity of some of the large city institutions and of numerous citizens 20 military hospitals, all furnished according to the requirements of modern medical and surgical science, have been organised, one of which, containing 400 beds, is installed in the seminary of the archbishopric. All the hospitals are linked up by tramways with the railway stations, and since the lines are of the same gauge the wounded will be conveyed without delay or change of vehicle from stations nearest the firing line to the hospital doors. Five gradients leading from the Milan railway station have been built and the invalids will be conveyed along one or other of these gradients according to the categories of sick or wounded they belong to. The installation of the hospitals has been organised in the same practical manner. The principal communes in the neighbourhood have joined in the work with the result that Milan and the surrounding district have placed 25,000 beds at the disposal of the army. The problem of personnel has been very easily solved for the population has offered a more than sufficient number of volunteers, all of whom readily accept the task allotted be it ever so modest. This municipal hospital service has been organised side by side with that of the efficient Italian Red Cross Society. Milan has profited by the past eight months to organise a sanitary service based upon the knowledge gained from battlefield experiences. What Milan has done has been done also with equal enthusiasm by other towns in Northern Italy. The organisation of the hospitals and the training of the staffs began at the end of last year, when well-informed and clear-sighted people realised that the participation of Italy in the war was inevitable."

Vacancy for a Medical Officer.—We are asked to state that a vacancy occurs for a medical officer willing to go on foreign service, to be attached to the Royal Engineers, East Anglian Division (T.F.). Usual pay and allowances for Territorial Force, R.A.M.C. Apply, Medical Officer in Charge, Royal Engineers, Radlett, Herts.

Wounded Allies Relief Committee.—The committee has received a report stating that the excellence of the French railway system and the improvements in emergency treatment make it possible for men to cover the 400 miles between the trenches and the hospital at Limoges in rather less than 30 hours. The Limoges hospital, which accommodates 150 patients, has received the warmest praise from General Delorme, of the French Medical Service, and the French Government has given 3000 francs for a hut to accommodate 20 more patients. Out of 600 cases treated there have been only 16 deaths. The hospital is now devoted exclusively to French wounded, for owing to the differences in religion the Government has found it advisable to provide special hospitals for native troops. The English are splendidly looked after in their own hospitals. The administrator appeals for gifts of tea, glass cloths, bath and roller towels, and slippers with leather soles, which may be sent to the Wounded Allies Relief Committee, Sardinia House, Kingsway, W.C., or to the Hôpital Militaire Anglais, Limoges, France.

The committee has opened a Kensington branch at 93, Lexham-gardens, Kensington, W., where a spacious house has kindly been lent rent free. The whole output of hospital equipment goes to the committee's hospitals, of which there are now three in France and two in the Balkans. In its first four days of working the branch has had the daily assistance of 100 ladies, but it can accommodate as many more, and would welcome other workers. The officials also warmly invite the public to call and see the work in progress.

The Depage Hospital, La Panne.—We are informed that a newly finished building, containing 300 beds, belonging to Dr. Depage's hospital was entirely destroyed by fire on the night of June 6th. No lives were lost.

Increased Hospital Accommodation for Wounded Soldiers in Dublin.—Through the generosity of Lord Iveagh the hospital accommodation for wounded soldiers in Dublin is about to be increased by 367 beds. Of these 200 will be in an annexe to the King George V. Military Hospital which Lord Iveagh has promised to build. Room for the remainder will be found in unused wards in the several Dublin hospitals.

The War and the Canadian Medical Association.—A Canadian correspondent writes: "The annual meeting of the Canadian Medical Association, which was to have been held this year in July in Vancouver, B.C., has been cancelled, as also has been the annual meeting of the Canadian Association for the Prevention of Tuberculosis, in the same city, about the same time. This is on account of so many prominent officers and members being away in Europe. The editor of the Journal has taken a medical commission. The general secretary of the association is with the McGill University General Hospital. Members of the finance committee and of the executive council are also serving abroad. In the meantime the affairs of the association and the Journal are being conducted by Dr. G. G. Campbell and Dr. J. W. Scane (Montreal). The association will have a strenuous year, but in the hands of these two such able men the best possible will be done for the association in the circumstances, and the association is very grateful to them for the proffer of their unpaid help."

The British Red Cross and the St. John Ambulance Association.—It is announced that a public meeting will be held on Wednesday next, June 16th, at 3 P.M., at the Mansion House, in aid of the funds of these institutions. The speakers will include Lord Lansdowne and Sir Edward Clarke.

Lady Wolverton calls attention to the fact that the demands upon the Red Cross Society are very heavy and that house linen and garments, both cotton and woollen, are wanted in large quantities, the garments most urgently needed being shirts and pyjamas—for summer wear,—vests, pants, handkerchiefs, and socks.

The Gretna Railway Disaster: A Military Train.—Sixty-six men of the Royal Scots injured in the Gretna railway disaster were brought to Edinburgh from the hospitals in and about Carlisle, and were taken to Craigleith Military Hospital, arriving at the Waverley station about 3.30. They travelled by the North British Railway in a Territorial military train recently fitted up by Mr. William Whitelaw, chairman of the North British Railway. It consists of seven vehicles, two of which contain cots, and has many advantages over the ordinary hospital train. Two tiers of cots are swung from the roof of the carriage in a manner similar to that in use on naval hospital ships, which eliminates vibration. Indiarubber fenders prevent the cots from coming into contact with the sides of the carriage when the train is in motion. An excellent feature of this type of train is that from the moment the wounded soldier is put in his cot until he is laid in bed in hospital he never leaves the cot, thus obviating one of the drawbacks of permanently fixed beds. The train, which includes a dining-car, was in charge of a R.A.M.C. officer, with two Red Cross sisters and R.A.M.C. orderlies; three Red Cross lady cooks prepared the food.

This was the first time the train had brought men north to Edinburgh. Hitherto it has been used to remove naval patients from Queensferry to other hospitals, but it is expected that in future greater use will be made of it in bringing wounded soldiers to Edinburgh. After the terrible railway accident the work of getting the men who could walk to the motor-cars was quickly accomplished, but there were others who had to be lifted from the train to the motors, and not a few limped badly. Injuries from burns were common. There were 26 cot cases.

SUPPRESSION OF THE BELGIAN RED CROSS BY GERMANY.—At the request of the Belgian Legation in London the Press Bureau has made public the fact that Baron von Bissing, the German Governor-General of the occupied provinces of Belgium, by a mandate dated April 14th, dissolved the Belgian Red Cross Central Committee and forcibly took possession of the funds and archives of the society, delegating Count B. von Hatzfeld to administer the institution. The Governor-General had previously demanded the help of the Belgian Red Cross for an institution he proposed to found for aid and protection to working women. The Red Cross Society refused on the ground that its objects were not within the scope of Red Cross work, in which they were supported by the International Red Cross Committee at Geneva.

OFFICIAL RESPIRATORS.—It is announced from the War Office that an improved type of respirator has been adopted on the recommendation of a special expert committee, and that there are ample supplies of this pattern available at the front. No unofficial help, therefore, is needed in this matter.

REST HOUSES FOR MILITARY NURSES.—The Duke of Portland and Lord Plymouth issue a weighty appeal in support of a hostel where nurses can be temporarily lodged while resting from their labours or awaiting orders which it is proposed to establish in close connexion with Queen Alexandra's War Fund for Nurses of the Red Cross and the Order of St. John of Jerusalem. It will serve as a clearing house also, nurses needing serious attention being sent to hospitals, others undergoing only dental or minor treatment remaining in the hostel, while yet others would be put into communication with the many kind people who are willing to offer them hospitality. During the war its advantages should be free. When the war is over it is hoped that it will remain as a permanent hostel where nurses can live at a moderate cost in congenial company. Subscriptions may be sent to the honorary treasurers at 3, Grosvenor-square, W., cheques crossed "London City and Midland Bank."

Lieutenant Andrew Philip, who had only recently given up his post as medical inspector of schools for the Keighley district of Yorkshire to take a temporary commission in the Royal Army Medical Corps, was suddenly taken ill after his first parade and fell, fracturing his skull. He was removed to the Royal Infirmary, Hull, where he died the following day.

PAYMENT OF CIVILIAN MEDICAL PRACTITIONERS FOR ATTENDANCE ON SOLDIERS' WIVES AND FAMILIES.—A medical correspondent, signing himself "Sine Premio Opifex," writes that seeing in THE LANCET Mr. Tennant's remarks about the various duties that medical men might perform in the war and the payments they might expect, he wrote to the War Office that he had attended the wives and children of a good many soldiers and supplied them with medicines, &c., at his own expense, and asking to whom he could render his account. He encloses the ensuing correspondence—viz., a letter dated April 14th, 1915, stating that the engagement of medical men for part-time service is in the hands of the local authorities, and directing him to communicate with the Deputy Director of Medical Services, Headquarters, Southern Command, Salisbury; a copy of his letter in accordance therewith asking if he may send his account there, and a reply therefrom stating that it is regretted that fees cannot be claimed by him as he does not come under paragraph 496 of the Regulations of the Army Medical Service, which reads: "The wives of N.C.O.'s and men who are borne on the married roll, with their children and stepchildren (under 14 years of age), will when present with their corps or in receipt of separation allowance, be allowed medical attendance and medical comforts at the public expense only at stations where there is a medical officer, or when a civilian medical practitioner is engaged for attendance on the troops, and provided in each case that they reside within the prescribed radius (one mile)." It will therefore be seen that civilian medical men cannot claim fees for attendance on the dependents of soldiers unless they have been specially engaged for attendance on troops, and then only for visits if the soldier's wife and family live within a mile from the doctor.

Medical News.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—At the annual election of the Royal College of Surgeons the following were elected for the ensuing year:—President: Mr. F. Conway Dwyer. Vice-President: Mr. W. Taylor. Secretary: Sir Charles A. Cameron. Council: Mr. W. Stoker, Sir Charles A. Cameron, Sir L. H. Ormsby, Mr. R. D. Purefoy, Mr. H. G. Sherlock, Sir Charles B. Ball, Mr. J. B. Story, Sir Thomas Myles, Sir Arthur Chance, Mr. S. M'C. Boyd, Sir Robert H. Woods, Mr. R. Lane Joynt, Mr. R. B. M'Causland, Mr. T. E. Gordon, Mr. E. H. Taylor, Mr. A. J. M'A. Blayney, Mr. R. C. B. Maunsell, Mr. T. N. Smith, and Mr. W. I. Wheeler.

LIVINGSTONE COLLEGE.—Commemoration Day was celebrated on June 3rd, the chair being taken by the former Principal and Founder, Lieutenant C. F. Harford, R.A.M.C. The Principal said that the session had been a successful one, but the call for medical men was now more urgent, and the committee would probably be shortly deciding to discontinue college sessions until the declaration of peace, so as to free those remaining on the staff to help in the national crisis. Two members of the staff had already taken commissions. It was thought that possibly the college, with its beautiful grounds, would be accepted by the War Office as an auxiliary hospital. Lieutenant Harford spoke of how the war affected Livingstone College as a brotherhood—unbroken, even though some who had been trained there together were now technically regarded as enemies—and as a missionary agency. Although Livingstone College was an international college, those responsible for carrying it on were British men and women and therefore had national responsibilities, whence it was possible that it might be found necessary to close down for a time. The meeting was then addressed very shortly by seven old students of the college. Mr. F. H. Hawkins, LL.B., secretary of the London Missionary Society, in the concluding address, said that in the first ten years of the history of this mission in Central Africa, 11 of their missionaries died and 6 were invalided home, and with one exception were never able to return to their work. In the last 12 years they had not had a single death in the mission or a single case of a man being invalided home. The explanation was that men had learned what Livingstone College was teaching them—the care of their own health, hygienic conditions, the need for building their houses in a healthy position, for draining the land round their houses, and for taking care of their heads when out in the sun. The missionary societies were very grateful to Livingstone College for the splendid services it had rendered.

PRIESTLEY MEMORIAL LECTURES.—The sixth of these lectures, given under the auspices of the National Health Society, is announced to take place in the Barnes Hall of the Royal Society of Medicine, Wimpole-street, W., on Wednesday next, June 16th. The lecturer, Dr. A. E. Shipley, Master of Christ's College, Cambridge, will deal with the dangers of flies and lice in connexion with the war. Sir James Crichton-Browne will preside.

THE Board of Trinity College, Dublin, has appointed Miss Euphan Montgomerie Maxwell to the recently established Montgomery lectureship in ophthalmology. Miss Maxwell is a graduate in medicine and surgery of the University of Dublin, a Fellow of the Royal College of Surgeons in Ireland, and holds the position of assistant surgeon and pathologist at the Royal Victoria Eye and Ear Hospital, Dublin.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Parliament and the War.

ALL the attention of Parliament is now absorbed in matters arising out of the war. The Coalition Government has met the House of Commons, and since the resumption of business after the Whitsuntide recess the energies of Parliament have been devoted to passing the Ministry of Munitions Bill.

British Casualties in the War.

The Prime Minister states that the casualties in the French and Mediterranean Expeditionary Forces (including the Territorial Force and the Colonial and Indian contingents) to May 31st are as follows:—

	Officers.	Other ranks.
Killed	3,327	47,015
Wounded	6,498	147,482
Missing	1,130	52,617
Total	10,955	247,114

The total for all ranks is thus 258,069. The Prime Minister has promised soon to give the complete figures for the Navy and Naval Division.

HOUSE OF COMMONS.

MONDAY, JUNE 7TH.

Proposed New Sanatorium for Middlesex.

Mr. NIELD asked the President of the Local Government Board whether, in connexion with the proposed building of a sanatorium by the Middlesex County Council at Mayland, Essex, he was aware that since the outbreak of war the council had decided that, while completing the purchase of the site, it was not desirable to apply for the consent of the Board to borrow a large sum of public money for the building, or to apply to the Public Works Loan Commissioners for a loan, or go to the public in competition with the Treasury at a time like the present when the whole resources of the country were urgently required to be husbanded or employed for the vigorous prosecution of the war in order to bring about its speedy conclusion; and whether such course had received his sanction.—Mr. LONG replied: I am aware of the resolutions passed by the county council at their meetings in January and May last. No sanction on my part is required in the circumstances described in the question, but if the honourable Member wishes to know whether I think that undertakings of this kind should be postponed in the present circumstances I can inform him that I do.

Mr. NIELD asked the Chancellor of the Exchequer whether he was prepared to sanction the advance by the Public Works Loan Board of the sum requisite for the erection by the Middlesex County Council of a large sanatorium for the treatment of tuberculosis.—Mr. MCKENNA answered: This matter is one for the President of the Local Government Board in the first instance and, having regard to the reply which he has given on this subject to-day, I do not think it probable that any application for a loan will come before the Public Works Loan Board or the Treasury for sanction at present.

Medical Officers of the Territorial Force.

Colonel GREIG asked the Financial Secretary to the War Office whether any steps were being taken to remedy the hardships of medical officers of the Territorial Force who had been mobilised with regard to promotion and the question of a gratuity.—Mr. FORSTER replied: I hope to be in a position to make a statement on this question before long.

TUESDAY, JUNE 8TH.

Medical Certificates for Sick Soldiers.

Sir J. D. REES asked the Under Secretary for War whether commanding officers had been instructed to accept certificates given by duly qualified medical men to sick soldiers on furlough residing at a distance of over two miles from military hospitals; if so, whether any such certificates had been ignored and the sick soldiers who obtained them punished; and, if so, whether such action was approved by the superior military authorities.—Mr. TENNANT answered: The rule in force is that when a man forwards a civil medical practitioner's certificate recommending an extension of furlough arrangements are made for his readmission to the nearest military hospital, where he will remain under treatment until he is fit to rejoin his unit or depôt. I am informed that no cases had come to notice prior to the issue of the instructions I have mentioned of civilian medical practitioners' certificates being ignored, either with or without the approval of the superior military authorities, once it had been ascertained beyond doubt that the certificates were genuine.

The Eyesight of Recruits.

Sir IVOR HERBERT asked the Under Secretary for War whether any arrangements had been made for the special treatment of recruits found to be suffering from defective eyesight caused by the conditions under which they had been industrially employed before enlistment which rendered them temporarily unfit for military service.—Mr. TENNANT answered: Men suffering from the severer forms of defective eyesight should not, of course, be enlisted, and if by any chance they have got into the army they should be discharged. Men suffering from the milder forms would receive the same treatment that they would have in civil life—i.e., correction of any error of refraction, tonic drugs, rest or modified exercises, and local treatment to the eye.

Discharges from the Army.

Sir IVOR HERBERT asked the Under Secretary for War whether the attention of the Secretary of State had been drawn to the large number of discharges from the new armies for physical and other causes; and whether any measures were being taken to prevent the enlistment of such discharged men and to retain their services for the industrial or agricultural operations for which they might be fitted.—Mr. TENNANT said in reply: The matter referred to in the first part of the question receives the constant attention of the military authorities. Men who have enlisted since the beginning of the war and have once been discharged are not accepted for re-enlistment, with the sole exception of those discharged on purely medical grounds whom the examining medical officer, with full knowledge of the cause of discharge, pronounces to be fit for service at home and abroad.

Meat Inspection.

Mr. WILLIAM THORNE asked the Financial Secretary to the War Office a question to elicit the conditions under which frozen meat for the use of the troops was inspected.—Mr. FORSTER replied: The scope of the inspection is well understood. All meat imported is examined and certified as free from disease at the port of shipment. Before issue to the troops it is passed by a board of officers, which includes an officer of the Army Service Corps.

WEDNESDAY, JUNE 9TH.

Medical Students and War Service.

Mr. MCCALLUM SCOTT asked the Under Secretary of State for War whether the arrangements previously announced, whereby medical students in their final year of study who had only their final examinations to pass might be released from combatant corps if they applied in order to complete their medical studies and qualify for medical service, had been altered; and, if so, in what respect.—Mr. TENNANT answered: The ruling applied to medical students who were serving in the ranks and has not been altered.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BARFORD, A. M., M.R.C.S., L.R.C.P. Lond., D.P.H., has been appointed Medical Officer of Health and School Medical Officer for Newark.

JOHNSON, J., M.B., C.M. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Birtley District of the county of Durham.

JONES, PETER, M.D. Edin., has been appointed Medical Officer of Health to the Abergele and Pensarn Urban District Council.

BAE, HARRY, J., M.B., Ch.B. Aberd., has been appointed Tuberculosis Officer for the county of Aberdeen.

ROSS, V. A., M.B., C.M. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Harris District of the county of Inverness.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

BIRKENHEAD BOROUGH HOSPITAL.—House Surgeons.

BIRMINGHAM CORPORATION CITY HOSPITAL, Lodge-road.—Temporary Female Assistant Resident Medical Officer. Salary £250 per annum, with board, residence, and washing.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £250 per annum, with apartments, attendance, &c.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Junior House Surgeon. Salary £100 per annum, with residence, board, &c.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—House Surgeon. Salary £100 per annum, with board-residence.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £120 per annum, with board, residence, and laundry.

BRADFORD EDUCATION COMMITTEE.—Assistant School Dentist. Salary £300 per annum.

BRISTOL ROYAL INFIRMARY.—Throat, Nose, and Ear House Surgeon for six months. Salary at rate of £120 per annum, with board, apartments, and laundry.

BUENOS AYRES, BRITISH HOSPITAL.—Senior Resident Medical Officer, unmarried. Salary £275 per annum. Also Assistant Resident Medical Officer, unmarried. Salary £250 per annum, with board, lodging, &c.

BURY INFIRMARY.—Senior and Junior House Surgeons. Salary £175 and £150 per annum respectively, with board, residence, and washing.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

CARDIFF, WELSH METROPOLITAN WAR HOSPITAL, Whitchurch, near Cardiff.—Pathologist and Bacteriologist. Salary £1 per day, with board, apartments, and washing.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £200 per annum, with apartments (not board).

CIRENCESTER, GLOS., 1ST SOUTH MIDLAND MOUNTED BRIGADE FIELD AMBULANCE.—Two Medical Officers to complete 2nd Line (Territorial).

COVENTRY AND WARWICKSHIRE HOSPITAL.—House Surgeon. Salary as arranged. Also Third House Surgeon. Salary 6 guineas per week, with board and residence.

CROYDON UNION.—Assistant Medical Superintendent of Infirmary and Assistant Medical Officer of Workhouse and Children's Homes. Salary £225 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Clinical Assistants in Out-patient Departments.

FOLKESTONE, ROYAL VICTORIA HOSPITAL.—House Surgeon. Salary as agreed, with board, residence, and laundry.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway, N.—House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £150 per annum, with board, residence, and laundry.

HARTLEPOOLS HOSPITAL.—House Surgeon. Salary £125 per annum, with board, washing, and lodging.

HEREFORD COUNTY AND CITY ASYLUM.—Locum Tenens Assistant Medical Officer. Salary £7 7*s.*, with board.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton. —House Physician for six months. Salary 30 guineas. Also Assistant Resident Medical Officer. Salary £100 per annum, with board and residence.

INVERNESS, NORTHERN INFIRMARY.—House Surgeon. Salary £150 per annum, with board, &c.

LEAMINGTON SPA, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—Second Resident Medical Officer. Salary £200 per annum, with board, residence, and laundry.

LIVERPOOL, WALTON INSTITUTION, Rice-lane, Walton.—Assistant Resident Medical Officer, unmarried. Salary at rate of £300 per annum, with board, &c.

MACCLESFIELD GENERAL INFIRMARY.—Resident Medical Officer. Salary £150 per annum, with board and residence.

MANCHESTER CORPORATION, BAGULEY SANATORIUM.—Superintendent. Salary £400 per annum, with house, coal, light, and washing.

MANCHESTER COUNTY ASYLUM, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN. Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Fitzroy-square, W. —House Surgeon. Salary £150 per annum. Also Honorary Anæsthetist and Honorary Clinical Assistant.

NEW ZEALAND WAR CONTINGENT ASSOCIATION, 25, Victoria-street, London, S.W.—Resident Medical Officer for New Zealand Auxiliary Hospital, Walton-on-Thames. Salary at rate of £7 7*s.* per week, with board.

NORWICH, CITY OF.—Assistant School Medical Officer. Salary at rate of £400 per annum.

NOTTINGHAM CHILDREN'S HOSPITAL.—Female House Surgeon. Salary at rate of £150 per annum, with apartments, board, and washing.

NOTTINGHAM GENERAL HOSPITAL.—Senior House Physician and Assistant House Physician. Salary at rate of £300 and £250 per annum respectively, with board, residence, and laundry.

OLDHAM COUNTY BOROUGH.—Assistant Schools Medical Officer. Salary £325 per annum.

POPLAR BOROUGH COUNCIL, BOW MATERNITY CENTRE.—Medical Practitioner for two and a half hour session every Thursday afternoon. Salary 21*s.* a session.

PORTSMOUTH ROYAL HOSPITAL.—House Surgeon for six months. Salary £150 per annum, with board, &c.

ROCHESTER, KENT, ST. BARTHOLOMEW'S HOSPITAL.—Assistant House Surgeon, unmarried, for six months.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer. Salary at rate £90 per annum, with board, residence, and laundry.

SALFORD COUNTY BOROUGH.—Medical Officer for Maternity and Child Welfare work. Salary £300 per annum.

SALISBURY GENERAL INFIRMARY.—House Surgeon and Assistant House Surgeon, unmarried. Salary £150 and £100 per annum respectively, with apartments, board, lodging, and washing.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House Surgeons. Salary £100 and £80 per annum respectively, with board, residence, &c.

SHEFFIELD ROYAL INFIRMARY.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.

SOUTHAMPTON, PARISH INFIRMARY, Shirley Warren.—Resident Assistant Medical Officer. Salary £250 per annum, with apartments, rations, washing, and attendance.

SOUTHWARK UNION INFIRMARY, East Dulwich-grove, S.E.—Assistant Medical Superintendent. Salary at rate of £250 per annum, with board, apartments, and washing.

STOCKPORT INFIRMARY.—Senior House Surgeon. Salary £200 per annum, with board, washing, and residence.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician. Salary £125 per annum, with board, apartments, and washing.

THROAT HOSPITAL, Golden-square, W.—Resident House Surgeon.

TINGWALL, WHITENESS, AND WEISDALE PARISH.—Medical Officer and Public Vaccinator. Salary £45 per annum.

VENTNOR, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Isle of Wight.—Assistant Resident Medical Officer.

WALSALL AND DISTRICT HOSPITAL.—Assistant House Surgeon and Anæsthetist. Salary £150 per annum, with board, residence, and laundry.

WEST BROMWICH AND DISTRICT HOSPITAL.—House Surgeon and Assistant House Surgeon, unmarried. Salary £150 and £120 per annum respectively, with residence, board, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL.—Resident Medical Officer. Salary £160 per annum. Also House Physicians. Salary £120 and £100 per annum, with board, residence, and washing.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £150 per annum, with board, apartments, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Milngavie, in the county of Dumbarton; at Charlestown, in the county of Mayo; and at New Quay, in the county of Cardigan.

Births, Marriages, and Deaths.

BIRTHS.

CANE.—On June 3rd, at Orton Longueville, Peterborough, to Captain (R.A.M.C.) and Mrs. L. B. Cane, a daughter.

HODGES.—On June 5th, at Queen Anne-terrace, Plymouth, Barbara, wife of Lieutenant G. M. Hodges, R.A.M.C., of a daughter.

TEICHMANN.—On June 5th, at Sitka, Chislehurst, the wife of Captain O. Teichmann, R.A.M.C. (T.), Worcestershire Yeomanry, of a son.

MARRIAGES.

BRAHAM—WIBORG.—On June 5th, in London, Lieutenant Noel Braham, R.A.M.C., to Ruth, daughter of the late Ludvig Wiborg, of Brevik, Norway.

CARMICHAEL—HEPWORTH.—On June 3rd, at the Parish Church, Morley, Yorks, Donald Livingstone Carmichael, Ch.B., M.D., to Constance Margaret, eldest daughter of Dr. and Mrs. George Hepworth, of Clarence Lodge, Morley.

DAINTY—LOCKHART.—On June 5th, at Holy Trinity, Brompton, Lieutenant Ralph George Dainty, R.A.M.C., to Marjorie Kathleen, youngest daughter of the late William Castleton Lockhart.

WILSON—WHITWELL.—On June 1st, at St. Stephen's Church, Enfield, Lieutenant (temporary) Cecil William Wilson, R.A.M.C., to Mary Dorothy, daughter of Mr. and Mrs. Henry Whitwell, of Winchmore Hill.

DEATHS.

DANE.—On June 7th, at Bournemouth, Harold Dane, M.R.C.S., L.R.C.P. Lond.

ROSE.—On June 2nd, at a Nursing Home in London, Deputy Surgeon-General H. J. Rose, formerly in the 2nd (Queen's) and West Yorkshire Regiments, aged 82 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

BOOKS, ETC., RECEIVED.

BALE, JOHN, SONS, AND DANIELSSON, LIMITED, London.
A Guide to the Use of Tuberculin. By Archer W. R. Cochrane, M.B. Lond., F.R.C.S. Eng., Major I.M.S., and Cuthbert A. Sprawson, M.D., B.S. Lond., M.R.C.P., Major I.M.S. Price 5*s.* net.
Dental Directory, 1915. Enlarged edition. Price 3*s.* 6*d.* net.

BUTLER AND TANNER, Selwood Press, Frome, England.
Brazil (1913). By J. C. Oakenfull. Price 7*s.* 6*d.* net.

HILTON AND CO., Calcutta. SIMPKIN, MARSHALL, AND CO., London.
Treatise on Materia Medica and Therapeutics. By Rakhaldas Ghosh, L.M.S. Cal. Univ. Edited by Lieutenant-Colonel B. H. Deare, I.M.S., with the assistance of Birendra Nath Ghosh, F.R.F.P.S. Glasg. Sixth edition. Price 7*s.* 6*d.* net.

HOEBER, PAUL B., New York.
Cancer, its Cause and Treatment. By L. Duncan Bulkley, M.D., Senior Physician, New York Skin and Cancer Hospital. Price $1.50 net.

MACMILLAN COMPANY, THE, New York.
The Body in Health. By M. V. O'Shea and J. H. Kellogg. Price 3*s.* 6*d.*

SHAW AND SONS, London. HOEBER, PAUL B., New York.
Lectures on the Heart: comprising the Herter Lectures (Baltimore), Harvey Lecture (New York), and an Address to the Faculty of Medicine (Montreal). By Thomas Lewis, M.D., F.R.C.P., D.Sc., Physician to the City of London Hospital.

UNIVERSITY PRESS, Cambridge.
Infant Mortality. By Hugh T. Ashby, B.A., M.D., B.C. Camb., M.R.C.P. Lond., Visiting Physician to the Manchester Children's Hospital. Price 10*s.* 6*d.* net.

WRIGHT, JOHN, AND SONS, Bristol.
The Medical Annual: A Year Book of Treatment and Practitoners' Index. 1915. Price 10*s.* net.

Notes, Short Comments, and Answers to Correspondents.

MRS. TIMOTHY BRADLEE'S EXPLOIT: A CORRECTION.

IN the *Boston Medical and Surgical Journal* of September, 1872, appeared the following note:—"On the 21st of August Mrs. Timothy Bradlee, of Trumbull County, Ohio, gave birth to eight children—three boys and five girls. They are all living and healthy, but quite small. Mrs. Bradlee has given birth to two pairs of twins. She was a triplet, her mother and father being twins and her grandmother the mother of five pairs of twins." This case in due course found its way into important publications, such as Gould and Pyle's "Anomalies and Curiosities of Medicine" and the paper on duplicate twins by Wider in the *American Journal of Anatomy*. Recently Dr. G. H. Parker, of Harvard University, determined to ascertain beyond doubt the authenticity of the case as it was so remarkable. He wrote to Mr. M. B. Tayler, clerk of the courts, Trumbull County, stating that further information concerning it would be gratefully received. The latter replied that on inquiry he found that there was no truth in the statement. It seems that a practical joker went into one of the local newspaper offices and set up an article which he succeeded in having printed in one or two copies of the paper. The article was then taken out and the type distributed. But one of the copies was sent to a New York journal. The consequences probably never entered the joker's imagination. American medical journals of the highest class gave currency to an absurdity which has passed into standard works. We cannot recall any similar instance in comparatively modern times in which an error of so obvious a sort has crept into medical literature. Having circulated so long and obtained such publication, it will probably be further copied. We are pleased to do our part in helping to prevent this.

WHAT IS A CONSULTANT?

To the Editor of THE LANCET.

SIR,—With regard to the case put by "Enquirer" in your issue of June 5th (p. 1214), the customary procedure varies according to locality. In the English provinces no one would feel doubtful. I remember being astonished three or four years ago when a patient told me Sir Blank Dash had attended him regularly during an attack of typhoid. The distance was much greater than from the Cavendish-square quarter to the Langham Hotel, while the fee per visit, since the man was a small publican, must have been considerably under 3 guineas. Indeed, in the provinces the consultant's only perceptible *differentia* is that he does not undertake midwifery, unless that and gynæcology be his main occupation. Even this is by no means an absolute rule, for I know of a recently appointed clinical teacher at a well-known provincial university, a man of middle-age, who does midwifery as a part of his general practice.

I am, Sir, yours faithfully,

June 8th, 1915. ONLOOKER.

THE GERMAN ARMY MEDICAL CORPS.

FOUR years ago the following note was published in THE LANCET on the inadequate supply of candidates for the German Army Medical Corps:—"The younger members of the medical profession in Germany are not as a general rule inclined to enter the Army Medical Corps, and the undoubted advantages which a medical man may obtain through holding a commission in the army are not sufficiently appreciated; the result is that candidates are not numerous, and there is some difficulty in filling the vacancies which arise in the ordinary course of events. The medical officers of the army have for the most part received their professional education in the Army Medical School, and for each year of gratuitous instruction in that establishment they are required to serve two years in the army; some of them, however, but these are a minority, study as civilians and afterwards join the Army Medical Corps. The civilians who become medical officers on active service are continually diminishing in number, so that many appointments which would properly be given to medical officers on active service in the junior grades have to be filled by civilians accomplishing their half year of compulsory military service." The causes of this state of things were considered to be insufficient remuneration of the junior grades, a feeling of personal independence not compatible with the requirements of military discipline, restriction of private practice through being so much away from home on military duties, and monotony of practice in garrison towns. To provide the army with trained specialists, assistantships in hospitals and clinics were reserved for army medical officers exclusively, but the officers in many cases who had been trained as specialists at the expense of the army left the service and settled as specialists in the towns.

The medical officers also complained that with respect to position and privileges they were at a disadvantage as compared with regimental officers of equivalent rank. As regards this question of rank we announced in THE LANCET of March 14th, 1914, that General von Falkenhayn, the Minister for War, attended a meeting of the Berlin Society of Army Doctors and informed the assembled medical men that the Emperor by a stroke of the pen had put an end to the sharp distinction between army doctors of whatever rank and the youngest combatant officer who has received a commission. This order gave them disciplinary rights—rights to ceremonial salutes, the right to wear the officer's scarf, and the right to be buried with military honours. The delicate question of precedence remained unsettled. The position in Germany, as with the Allies, has no doubt been altered since the above information was published, but it illustrates the evolution of the Army Medical Service in all lands, and its necessary recognition as an integral part of any army which must be recognised as such, and not as an arm which may be attached or detached and fostered or neglected as merely mechanical exigencies seem to dictate.

A TESTIMONIAL TO VACCINATION.

THE following extract from a letter recently received in England from a newspaper reporter in Calcutta has been sent to us by his mother. The letter gives many details as to the cases of small-pox in the hospital which have no particular medical significance, but his advocacy of vaccination is particularly forcible:—

"I suppose you would like to hear something about my attack of small-pox. Well, there is an epidemic of it in Calcutta just now, and a lot of Europeans (and tons of natives) are down with it. I must consider myself very lucky in having it in a mild form—so mild that I was convalescent in a few days after being admitted. After that it was simply a question of waiting until there was no possibility of anyone catching it from me. Jove! it was like being in gaol. Before I was attacked I was one of the silly fools (they can be called by no other name) who scoffed at vaccination; but after seeing what I have seen this past fortnight my views on that matter have entirely changed. There is not the slightest doubt that the two vaccination marks on my arm saved me from—well, perhaps the worst. In every instance the bad cases were those in which the patient had either never been vaccinated at all, or else not for many many years."

SILVER PAPER FOR CHARITY.

THE fact that there is money in unconsidered trifles is made plain in a recent issue of the *East Ham Echo*, which states that some time ago the sons and daughters of the readers of that paper were enrolled into a league to show the young idea how to combine. It appears that about 18 months ago it was suggested that the members should collect silver paper, which could be sold and the money sent to the East Ham Hospital. The advice was taken and the young people set about collecting the silver paper. Since then members have sent in their collections on three separate occasions, with the result that the sum of £8 15*s.* has accrued to the hospital.

A PORTABLE SHOWER-BATH.

THE tonic and exhilarating effect of a cold shower-bath on the person whose circulation reacts is well known. There is experienced a shock, the cutaneous vessels at once contract and send the superficial blood-supply inward, while respiration is momentarily arrested, and then slowed and increased in depth. The return of the blood in increased volume to the surface is the reaction which gives a sensation of warmth and general well-being. The stimulus is greater when a shower-bath with some force is used. To meet those instances in which the luxury of a shower-bath is not a part of the domestic bath equipment Messrs. Bostel and Sons, of Ebury-street, London, S.W., have introduced a portable shower-bath which answers the requirements very well. It consists of two containers 10 inches in diameter and 4 inches deep fitting within each other, one a plain round metal vessel and the other a similar appliance, but with its bottom perforated. The first container is filled with water at any desired temperature. The perforated container with the perforations upward is then placed over it, which it encircles like a telescopic tube. On now inverting the appliance so that the perforated disc is underneath the water is discharged in a smart shower. It is important that the shower should be smart and not a dribble, as otherwise the effect on the system is depressing rather than stimulating. This is done by four air tubes fixed in the perforated container so that the air freely entering at the top allows the water to escape with a rush. It is very neatly made and moderately priced. While it is correctly described as portable it incidentally serves as a receptacle for articles of toilette as, for example, a sponge, comb and brush, so that the space it occupies can be utilised in the travelling kit. It is suggested that its use in a campaign would be much appreciated, and no doubt it would. Many will be glad of it, however, as an adjunct to the domestic bath equipment.

RHUBARB POISONING.

F. W. (London) writes: With reference to the letters on this subject which have recently appeared in THE LANCET, everyone knows of cases where the eating of rhubarb has caused severe diarrhœa and sickness and a sensation of having been poisoned. One old gentleman, after some uncomfortable experiences, refuses to eat the "forced" rhubarb, but always waits for what he terms the "field" rhubarb. He had been informed that a good deal of forced rhubarb was grown in coal-mines where it was warm and the dung of the pit ponies was used as manure. I do not know whether there is, or ever was, any truth in this, but it is the reason of his abstinence.

AN INDEMNITY POLICY FOR THE MEDICAL MAN.

A NOVEL feature of insurance is introduced by the Norwich Union Fire Insurance Society, whereby a policy can be taken out which provides, in addition to the usual benefits for accidental loss of life, limbs, or sight, complete indemnity against financial loss incurred by accident or sickness, including diminution in earnings or salary, and the cost of employing a locum tenens. The amount of the indemnity is decided upon by the assured, and he pays the premium accordingly. Under the scheme there is no question of getting a certain weekly allowance, be the temporary disablement trivial or severe; the definite amount of indemnity is stated on the face of the policy, and that is the amount upon which the assured can draw, as and when required, for medical fees, nursing-home charges, travelling and other expenses of convalescence, additional household expenses, and payment of locum tenens, irrespective of the period of disablement. The common sense of this arrangement suggests that it might have been made a regular feature of insurance years ago. Full particulars of benefits and premiums can be obtained on application to the society at St. Giles-street, Norwich.

SCOPOLAMINE.

MANY notices have lately been appearing in the lay press with reference to the use of scopolamine anæsthesia, or so-called "twilight sleep," in obstetrics. A few years ago the Council on Pharmacy and Chemistry of the American Medical Association came to the conclusion that scopolamine and hyoscine are synonyms for the same alkaloid. THE LANCET of Feb. 10th, 1906 (p. 393), contained an annotation entitled "The Danger of Using Scopolamine as an Anæsthetic," in which it was stated that the anæsthetic was losing favour in France, and warnings were also given regarding the dose and administration of the drug. Apparently since then little has been published concerning the dangers, if we may judge from the recent campaign in the lay newspapers in its favour. It may not be generally known that "scopolamine" owes its name to G. A. Scopoli (1723–1787), a naturalist and chemist who was born at Cavelese, Tyrol, and whose name Linnæus gave to a genus of solanaceous plants resembling hyoscyamus, thence termed Scopolia.

THE HARRIS GAS FIRE.

Mr. Reginald P. Harris, of the Commercial Gas Company, Poplar, London, E., has introduced an interesting novelty in the design of a gas fire. Instead of the radiants consisting of the ordinary upright clay tubes they are curved, so that the front of the fire, viewed from the side, is shaped thus C. The effect of this is to concentrate more radiant heat downwards, and this is obvious, inasmuch as when a person stands a short distance from the fire he soon finds his boots and feet getting warm. That, of course, presents certain advantages, particularly as people so often sit near the fire with their feet close to the fender. We were inclined to believe at first that this arrangement would interfere with the hygienic working of the fire, as this particular construction, which means that the radiants bulge well in front of the fire, seemed likely to result in the escape of combustion products into the room. On applying, however, the test for hygienic efficiency, described in our issue of Feb. 7th, 1914, this fire showed no escape of combustion products into the room whatever, even when no elbow or flue was attached to the exit nozzle. This fire, therefore, may be added to the list we have published of those gas fires which have satisfactorily passed THE LANCET test. The Harris gas fire is made by the Vulcan Stove Company, Exeter.

SOMALILAND STATISTICS.

A REPORT on the affairs of this Protectorate (established in 1884) for the year 1913–14 has been presented to Parliament. It states, *inter alia*, that no reliable information is forthcoming as to the Somali population of the country at the present time, though 300,000 is given as an approximation. A census taken in 1911 of the alien community in the three coast towns of Berbera, Bulhar, and Zeyla showed the following results:—Europeans, 26; Indians, 741; Arabs, 1857; mixed, 789. There is a general hospital at each of the three towns named. At Berbera there is accommodation for 42 beds, at Bulhar for 4, and at Zeyla for 6. There is a dispensary attached to each of the hospitals, and in the aggregate there were 38,987 attendances during the year. The climate of the Protectorate is chiefly remarkable for its very dry character. In the interior it is healthy, generally speaking, throughout the year, but the same can scarcely be said of the coast belt. Here during the "Kharif"—i.e., the months of June, July, August, and not infrequently half of September—the atmospheric conditions are very trying for Europeans, and the effect on the nervous system is most pronounced. Terrific gales of sand-laden wind are then prevalent and the heat is intense, with the thermometer registering 105°–115° F. in the shade at mid-day, and seldom falling below 100° at night. Most of the sickness, however, occurs during the months immediately preceding and immediately following the "Kharif." During the months of November, December, January, and February the climatic conditions of the coast greatly improve.

THE REMINGTON "J."

THERE has recently been put upon the market by the makers of the well-known Remington typewriter a new model known as the Remington "J," with visible writing, which will do all the work of its predecessors, and has the advantages of being about half their weight and half their price. A practical trial of this new member of the Remington family convinces us of its utility for the medical man, who will find it to be a neat, handy, and, in its specially designed carrying-case, a very portable machine, capable of being set up anywhere at a moment's notice by merely throwing back the cover, and as speedily removable when desired. The Remington Typewriter Company, 100, Gracechurch-street, London, E.C., will send a booklet to those interested, on application.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 9.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 9th, 1915.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
June 3	30·022	S.W.	...	103	65	52	50	53	Cloudy
" 4	30·178	S.W.	...	114	74	53	57	59	Overcast
" 5	30·190	S.W.	...	118	73	55	57	60	Overcast
" 6	30·160	S.W.	...	120	76	58	61	64	Cloudy
" 7	30·070	S.W.	...	121	81	55	57	59	Fine
" 8	29·830	S.	...	127	89	59	67	73	Fine
" 9	29·900	E.	...	116	76	63	59	66	Cloudy

The following magazines, journals, &c., have been received:— Journal of Laryngology, Rhinology, and Otology, British Journal of Children's Diseases, Edinburgh Medical Journal, St. Bartholomew's Hospital Journal, British Dental Journal, Tropical Diseases Bulletin, Proceedings of the Pathological Society of Philadelphia, Report on Researches on Sprue in Ceylon, Medical Review, South African Medical Record, Cornell University Medical Bulletin, Pediatrics, Dublin Journal of Medical Science, Charing Cross Hospital Gazette, &c.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Papers:—Mr. W. L. Balls and Mr. F. S. Holton: Analyses of Agricultural Yield. Part II. The Sowing-date Experiment with Egyptian Cotton, 1913 (communicated by Dr. F. F. Blackman).—Mr. E. J. Russell: Soil Protozoa and Soil Bacteria (communicated by Mr. H. T. Brown).—Prof. W. M. Hicks: On the Enhanced Series of Lines in Spectra of the Alcaline Earths.—Prof. H. F. Baker: On Certain Linear Differential Equations of Astronomical Interest.—Prof. K. Pearson: On the Partial Correlation-ratio.—Mr. S. Skinner and Mr. F. Entwistle: The Effect of Temperature on the Hissing of Water when flowing through a Constricted Tube (communicated by Sir W. N. Shaw).—And other papers.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

THURSDAY.

SECTION OF DERMATOLOGY (Hon. Secretaries—S. E. Dore, A. M. H. Gray): at 5 P.M.

Exhibition of Cases (at 4.30 P.M.):

Dr. G. Pernet: (1) Morphœic Sclerodermia; (2) Extra-genital Primary Chancre.

Dr. Parkes Weber: Blue Tattooing of the Skin from Hypodermic Injections in a Morphinist.

Dr. E. A. Cockayne (introduced by Dr. Parkes Weber): Congenital Sclerodermia with Sclerodactylia.

Dr. G. F. Stebbing (introduced by Dr. Parkes Weber): (1) Case for Diagnosis; (2) Case for Diagnosis (?) Lichen Planus of Long Duration.

Dr. D. Walsh: Case for Diagnosis: with microscopical sections.

Mr. Laming Evans (introduced by Dr. Phineas S. Abraham): Acute Atrophodermia.

Dr. Phineas S. Abraham: Case of "Oriental Sore" (after treatment): with microscopical sections.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.

FRIDAY.—8.30 P.M., Annual General Meeting. Paper:—By the late Dr. R. M. C. Linnell: Some Observations on Malaria on Rubber Estates. Discussion:—Quinine Prophylaxis in Malaria.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

THURSDAY.—5 P.M., Croonian Lectures:—Surgeon-General Sir David Bruce, C.B.: Trypanosomes causing Disease in Man and Domestic Animals in Central Africa. (Lecture I.)

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. [illegible] P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patients (Mr. E. Gillespie). 2.30 P.M., Medical Out-patients (Dr. T. R. Whipham); Gynæcological Out-patients (Dr. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Surgical Operations (Mr. Carson). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. Howell Evans); Nose, Throat, and Ear Out-patients (Mr. H. D. Gillies). Radiography (Dr. Metcalfe). 3.30 P.M., Medical In-patients (Dr. A. J. Whiting). 4.30 P.M., Clinical Demonstration:—Dr. A. J. Whiting: Selected Medical Cases.

WEDNESDAY.—Clinics:—2.30 P.M., Throat Operations (Mr. Gillies). Children Out-patients (Dr. T. R. Whipham); Eye Out-patients (Mr. R. P. Brooks); Skin Out-patients. 5.30 P.M., Eye Operations (Mr. R. P. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patients (Dr. A. J. Whiting); Surgical Out-patients (Mr. Carson); Radiography (Dr. Metcalfe). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

FRIDAY.—2.30 P.M., Surgical Operations (Mr. Howell Evans). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. E. Gillespie); Eye Out-patients (Mr. R. P. Brooks).

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M. Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

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It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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An Investigation OF CERVICAL GLAND TUBERCULOSIS.

BY A. STANLEY GRIFFITH,
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LATELY SCIENTIFIC INVESTIGATOR, ROYAL COMMISSION ON TUBERCULOSIS.

THIS investigation of cervical gland tuberculosis was undertaken as a result of the isolation of atypical strains of human and bovine tubercle bacilli from cases of lupus which had developed in the skin of the neck after excision or ulceration of tuberculous cervical glands. The object of the investigation was to ascertain whether or not tubercle bacilli raised from tuberculous cervical glands ever diverged from the standard in the same way as these lupus tubercle bacilli.

Up to the present time strains of tubercle bacilli with the aberrant characteristics pertaining to the majority of lupus tubercle bacilli have been demonstrated very infrequently in internal varieties of human tuberculosis or in animal tuberculosis. The clearest example of the occurrence of atypical tubercle bacilli of lupoid order in lesions of human tuberculosis other than those of the skin is recorded by Weber and Steffenhagen.[1] These observers isolated atypical bovine tubercle bacilli on three separate occasions from the tuberculous metacarpal bone of a child.* This result is of special interest, because two years previous to Weber and Steffenhagen's investigations Oehlecker[2] had isolated from the same lesion in this child a fully virulent bovine culture. This case and others which have yielded atypical tubercle bacilli will be referred to more particularly in a forthcoming report on lupus. Among animal species atypical tubercle bacilli apparently identical with some bovine lupus strains have been found occasionally in the tuberculous horse[3] and pig.[4]

As wider knowledge of the occurrence and distribution of variant strains is desirable, and is, indeed, essential to my study of the etiology of lupus, I am carrying out on an extended scale investigations of the biological characters of tubercle bacilli from as many varieties of human and animal tuberculosis as possible. Incidentally, these investigations are giving much needed information upon the relative prevalence of the different standard types of tubercle bacilli in tuberculous animals and man.

Examination of a series of cervical gland cases was considered of first importance because cervical gland tuberculosis is the only form of tuberculosis of which lupus has been observed to be a direct sequela. About 12 per cent. of the cases of lupus which I have examined have followed tuberculosis of the cervical glands, and in all but one of these cases the lupoid lesions have yielded atypical tubercle bacilli. There was presumption, therefore, that if atypical tubercle bacilli of lupus class are occurring at all commonly in regions of the human body other than the skin, the quest for these aberrant strains should be more successful in cervical glands than in other internal tissues of the human body.

Inquiry in this sense began in August, 1912. It is being continued, but I am reporting now on the cases collected up to July, 1914, because for several months after the outbreak of war there was intermission in the supply of material.

I wish here to express my grateful thanks to various surgeons and pathologists who have made this research possible by supplying me with material and with notes of the cases. In Table I. the source of each material is recorded, and for the purpose of future reference I have given also the initials and age of the patient and the date of receipt of the glands.

The material examined has been derived from widely separated centres of population, and, while probably not in consecutive series from any of the sources, has been forwarded without any kind of selection.

Description of Material.

The original material was obtained by surgical operation from 110 persons, including children, adolescents, and adults. The material was mainly lymphatic glands. In a few instances it was pus from an abscess or curettings from a tuberculous sinus in the neck.

The sets of lymphatic glands were of two sorts. The great majority of the sets contained definitely tuberculous glands, which were caseous or caseo-calcareous wholly or in part. The rest consisted of glands which were not apparently tuberculous; on section they were found to be composed of homogeneous hyperplasic glandular tissue, or they showed yellow suppurative foci. In two of the cases the glands were from the axilla, and in one from the femoral region. In all other instances they were from the neck.

Methods of Bacteriological Investigation.

The glandular material was reduced to a pulp in a mortar, emulsified with sterile physiological salt solution, and filtered through muslin. The emulsion was examined microscopically, and then used to inoculate intraperitoneally one or two guinea-pigs. An attempt was usually made to secure a culture direct from the original material. A guinea-pig was killed after the lapse of from three to five weeks, and cultures were made from it if tuberculosis had developed. Sometimes when the direct culture was assured a guinea-pig strain was dispensed with.

In a good number of instances the guinea-pig or guinea-pigs inoculated with original material did not develop tuberculosis, although that material was macroscopically tuberculous, and in many instances showed tubercle bacilli microscopically. Cultures were nevertheless made from the normal organs of many of these guinea-pigs, the glands adjacent to the omentum and the spleen being chosen for the cultural experiments. It is important when searching for atypical tubercle bacilli to make cultures from guinea-pigs which have been inoculated with material presumed to be tuberculous, though their tissues may appear at the post-mortem examination to be perfectly normal. I have on several occasions cultivated atypical tubercle bacilli from the tissues of guinea-pigs which presented no macroscopical lesions of tuberculosis four to six weeks after inoculation with lupus material.

All the cultures were raised upon egg medium without glycerine and subcultivated on pure bovine serum. Glycerine egg was frequently used for primary cultures, but solely for the purpose of getting early information as to the type of the tubercle bacillus. All tests, cultural and pathogenetic, were made with cultures which had been grown throughout on media free from glycerine.

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* On a fourth occasion they obtained from the lesion a culture of typical bovine tubercle bacilli.

The differential media used have been glycerinated potato, glycerine serum, glycerine agar, and glycerine broth. The most reliable of these is, in my experience, glycerinated potato.

The comparative virulence of each culture has been tested on the rabbit by subcutaneous inoculation between the shoulders.

The subcutaneous method was chosen instead of the intravenous mainly because subcutaneous inoculation will bring out slight grades of attenuation in bovine tubercle bacilli which are not revealed by intravenous inoculation. The subcutaneous method also differentiates more clearly than the intravenous standard bovine tubercle bacilli from standard human tubercle bacilli which have displayed relatively high pathogenicity for the rabbit. Strains of human tubercle bacilli occasionally produce a good deal of tuberculosis in rabbits, and this tuberculosis, attributable either to higher virulence than is usual for human viruses or to specially susceptible rabbits, is apt to be more widespread and severe when the culture is inoculated intravenously than when it is inoculated subcutaneously.

The rabbits were inoculated with weighed quantities of moist growth from young serum cultures scraped from the surface of the serum with a platinum spatula and weighed directly without previous drying. The particular subcultures used were never more than 20 days old, usually 7 to 10, and except where repeat tests were necessary were in quite early generation, fourth to sixth.

The cultures which were bovine in cultural characters were tested on two or more rabbits, the dose in each case being 10 milligrammes; in a few instances the dose was a little more or a little less. The eugonic cultures were tested sometimes on two rabbits, sometimes on one only, and the dose given was often larger than 10 milligrammes. Rabbits were kept under observation until they died or until the experiment had lasted three or four months, when they were killed.

BACTERIOLOGICAL RESULTS.

The 110 cases with which I am dealing are divisible into three groups, comprising respectively 10, 29, and 71 individuals, as follows:—

Group 1.—Ten sets of lymphatic glands which were not macroscopically tuberculous did not produce tuberculosis in guinea-pigs. The glands in two of these sets contained small suppurative foci, and in the others were in a condition of hyperplasia. Microscopical examination of five and cultural experiments with four of the emulsions of the glands, including the two with purulent foci, yielded negative results. The patients from whom these glands were excised varied in age; five were under and five were over 12 years of age.

Group 2.—Lymphatic glands from 29 other patients also failed to produce tuberculosis in guinea-pigs. These glands were, however, definitely tuberculous to the naked eye and contained caseo-calcareous or softened caseous material or caseopus. In 15 cases tubercle bacilli were found in smear preparations of the emulsions used for inoculating the guinea-pigs; in 7 of these 15 emulsions tubercle bacilli were numerous or moderately numerous and were short and well-stained. Microscopical examination of 11 emulsions was negative, and of 3 was not made. Two of the cases were twice investigated, the interval between the examinations being four and a half and two and a half months, and on each occasion the result was negative. Fifty guinea-pigs in all were inoculated with the material from these 29 cases.

In order to ascertain whether the glands from these patients might not perhaps have been harbouring living tubercle bacilli, possessing so low an order of virulence as to be incapable of producing tuberculosis in the guinea-pig, many cultural experiments were made. Direct cultures were sown in 26 of the cases, and in 21 of these the culture tubes remained sterile, while in the remaining five they grew contaminating organisms. Cultures were also sown from the omental glands or from the spleens of 15 guinea-pigs, representing 13 of the cases; these experiments were likewise negative. The evidence suffices to show that there were in the material tested no living tubercle bacilli either of standard or of attenuated virulence.

I fully recognise that these negative results cannot be regarded as demonstrating necessarily the cure of the disease in the patient, but only that the tuberculous process was arrested in the particular glandular material used for experiment. Nevertheless they show conclusively that in glandular tuberculosis there is marked tendency to spontaneous cure of the disease. In this series of the sets of glands showing definite tuberculous lesions, 29 per cent. gave negative results in culture and in animal experiment. This tendency to spontaneous arrest of glandular tuberculosis should be remembered when estimating therapeutic effect of specific remedies in these conditions.

It is impossible to say what may have been the type of infection in these cases, but if, as seems probable (see below), the presence of numerous short tubercle bacilli is presumptive of bovine infection, 7 at least of the 29 cases were due to bovine tubercle bacilli.

There are many other instances recorded in which macroscopically tuberculous material has failed to produce tuberculosis in guinea-pigs.[5, 6] Several of the observers who have investigated cervical gland tuberculosis report such cases. Lewis[7] obtained negative results in 2 out of 17 cases of primary cervical gland tuberculosis. In both cases the microscopical examination showed the pathological picture of tuberculosis. Oehlecker[2] investigated cervical glands from 28 cases in which the clinical diagnosis of tuberculosis was indicated as probable, and in only 14 cases did the guinea-pigs inoculated develop tuberculosis. Oehlecker makes no statement with respect to the pathological condition of the glands from the 14 negative cases. Burckhardt[8] investigated 10 cases of cervical gland tuberculosis and found the material from one to be not infective for guinea-pigs. One of the 9 cases of cervical gland tuberculosis investigated by Cobbett for the Royal Commission on Tuberculosis, which yielded a bovine culture when first examined, gave negative results on two subsequent examinations.[5] In striking contrast to the above results are those of Mitchell.[9] This observer investigated 72 consecutive cases of cervical gland tuberculosis in children and did not obtain a single negative result.

Group 3.—In 71 of my 110 cases the original material produced tuberculosis in guinea-pigs, and cultures were obtained. Altogether 98 strains have been isolated, 33 directly and 65 through the guinea-pig.

The cultures from these 71 cases fall into two groups.

Eugonic Strains.

Thirty-seven of the cases yielded cultures which exhibited the cultural characteristics and rabbit pathogenicity of standard human tubercle bacilli. Each one of these strains produced luxuriant pigmented growths on serum and thick, creamy, wrinkled layers on glycerinated potato. Characteristic growths were also produced by each of the strains on one or other of the other glycerine media. Among the strains in this group there has been very little variation in degree of luxuriance. The virulence of one strain from each of the 37 cases has been tested on the rabbit by subcutaneous inoculation. Altogether 60 rabbits have been thus inoculated. In Table II. the details of these experiments are set out. The few rabbits which died prematurely are not included.

The pathogenic effects of these eugonic cultures have been very diverse, but the range of variation has not been wider than is usual in any large series of rabbits inoculated with standard human viruses. None of the rabbits died from tuberculosis, the period of observation being from three to four months. While in the great majority of the rabbits the tuberculosis produced was slight, in several it was of moderate and even of considerable severity.

Severe tuberculosis produced by human tubercle bacilli can as a rule be readily distinguished from the chronic forms of tuberculosis which sometimes follow subcutaneous inoculation of standard doses of bovine tubercle bacilli. Disseminated disease set up by human tubercle bacilli is generally limited to the lungs. There may be small tubercles in the kidneys, but these are usually few in number and retrogressive. The glands adjacent to the local lesion may show tuberculosis, but they are seldom extensively caseous. Distal lymphatic glands are almost invariably normal. Besides the difference in distribution of lesions there is difference also in the macroscopical appearance of the lesions, a difference which is at once apparent to those who have had some experience in the examination of experimentally tuberculous rabbits. Exceptions to this rule sometimes occur, and then it is necessary to isolate and test a culture from the suspicious lesion, for the original culture may have contained an admixture of bovine tubercle bacilli. In this series a culture was recovered from one of the most severely affected rabbits (No. 320). The recovered culture was eugonic and exhibited very low virulence for another rabbit, thus proving that the exceptionally severe disease in Rabbit 320 was due wholly to human tubercle bacilli.

It will be noted in Table II. that several cultures produced in the rabbit local tuberculosis only. Such limited pathogenic effect does not necessarily indicate an abnormally low grade of virulence of the particular cultures, for human viruses of proved standard virulence often produce in rabbits when inoculated subcutaneously no more than a local lesion. On account of this capacity of individual rabbits entirely to resist infection with standard human viruses the rabbit species is not a suitable one for estimating whether or not a culture of human type culturally is up to standard in virulence. In order to demonstrate attenuation in a human virus guinea-pigs (or monkeys) must be employed.

It is not, however, necessary systematically to test cultures of tuberculous viruses on the guinea-pig, because it is possible to judge from the results produced by the inoculation of original material whether the culture from that material is likely to show attenuation.

With one exception (exclusive of one case in which the guinea-pig died prematurely) the original material of the 37 human viruses produced typical tuberculosis in the guinea-pigs. The exception was Case 57, which produced in six weeks in one guinea-pig no tuberculosis, and in another caused tuberculosis limited to one inguinal gland. The culture raised from the latter guinea-pig was tested therefore in standard dose (0·1 mg.) on guinea-pigs as well as on rabbits. It produced in two guinea-pigs subcutaneously inoculated typical fatal general tuberculosis in 63 and 89 days. The slight effect in the original guinea-pig must be referred therefore to paucity of living tubercle bacilli in the emulsion and not to attenuation of virulence.

Dysgonic Strains.

From the remaining 34 of the 71 cases yielding cultures, the cultures isolated displayed less cultural luxuriance and higher virulence for the rabbit than those in the group just dealt with. The strains of these viruses have exhibited a wide range of variation in degree of luxuriance. In respect to 32 of the 34 viruses the range of cultural luxuriance corresponded exactly with that ascertained by the investigators of the Tuberculosis Commission for tubercle bacilli of bovine tuberculosis.

The two remaining strains have grown rather more luxuriantly than any strain of bovine origin which I have hitherto met with. The increased luxuriance was observed in primary culture on glycerine egg and in subculture on glycerine agar. On glycerine egg the colonies were as numerous as, and larger than on egg alone, but they were not pigmented (bovine tubercle bacilli as a rule grow very sparsely on glycerine egg in primary culture); on glycerine agar the growth ultimately formed was in places dense, wrinkled, and slightly pigmented, but the layer was not uniform and the rate of growth was slower than with human tubercle bacilli.

Similar relatively eugonic virulent strains have been isolated by Eastwood and F. Griffith from tuberculous children[6] and from the tuberculous lesions of swine.[4] The cultural characters of these two cervical gland strains were found to be stable after animal passage. Each strain was passed through the bodies of three rabbits in succession, and cultures from distal lesions of the last rabbit as well as from those of the two previous ones were identical in cultural character with the original culture. There was therefore no evidence of admixture of human tubercle bacilli.

The cultures from all these 34 cases proved highly virulent for rabbits and produced in them fatal general progressive tuberculosis identical in every respect with that produced after similar interval of time by tubercle bacilli of bovine tuberculosis.

None of the 71 viruses, whether of human or of bovine type culturally, has shown any evidence of attenuation. The culture from each virus was either a standard human culture or a standard bovine culture.

[The cultures from three of the cervical gland cases—viz., Nos. 53, 88, and 95—were isolated and tested (except the virulence test of Case 95 which was made by me) by Drs. Eastwood and F. Griffith. Two further cases, macroscopically tuberculous, investigated by them did not produce

TABLE I.—*List of Cases which yielded Cultures, and Summary of Results.*

No. of case.	Designation and date of virus.	Source of material.	Sex and age in years.	Macroscopical. Condition of glands.	Microscopical. Smear preparations of emulsions.	Derivation of cultures, direct or through G P.	Results in guinea-pigs inoculated with original material.	Classification of cultures.
1	W, 23/8/12	Mr. Kelly, Liverpool.	M., 23	Caseous, softening.	1 T B.	Direct – Guinea-pig +	2 G Ps, K 24 and 30 days. Slight G T.	Human.
2	M R, 11/9/12	,,	F., 23	Caseous, waxy.	Scattered T B, mostly short.	Direct + Guinea-pig +	2 G Ps, after 33 and 67 days. Severe G T.	Bovine.
3	N B, 11/9/12	Mr. Trotter, London.	F., 21	,, ,,	No T B.	Direct +	2 G Ps, K 55 days. Slight G T.	Human.
4	A S, 26/9/12	Mr. R. Johnson, London.	F., 39	Caseous, softened.	No T B.	,,	2 G Ps, K 47 days. Slight G T.	Human.
5	(S D, 2079), 8/10/12	Dr. Turnbull, London Hosp.	F., 30	Caseous, waxy.	No T B.	Direct – Guinea-pig +	1 G P, K 31 days. Slight G T.	Bovine.
10	F M, 27/11/12	Mr. Kelly.	M., 27	Firm, caseous areas.	No T B.	Direct +	1 G P, D 27 days. Severe G T.	Human.
11	(S D, 2484), 6/12/12	Dr. Turnbull.	F., 16	Caseous, in places softened.	1 T B.	Direct – Guinea-pig +	2 G Ps, K 26 and 56 days. Slight G T.	Bovine.
13	(S D, 2518), 11/12/12	,,	F., 12	Firm, caseous, and gritty.	No T B.	,, ,,	2 G Ps, K 30 and 51 days. Slight G T.	Human.
14	H E, 14/12/12	Mr. Kelly.	F., 19	Caseo-purulent.	? 1 T B.	,, ,,	2 G Ps, K 30 and 54 days. Slight G T.	Bovine.
19	E J, 17/1/13	Victoria Hosp., Chelsea.	M., 3¼	Caseo-calcareous.	Scattered short T B.	Direct + Guinea-pig +	1 G P, K 32 days, severe local T. Slight G T.	Bovine.
20	W B, 20/1/13	,,	M., 5	1 calcareous tubercle.	—	Guinea-pig +	1 G P, K 40 days. Moderate G T.	Bovine.
23	B R, 3/2/13	,,	M., 2	Caseo-calcareous.	Numerous T B, mostly short.	,,	1 G P, D 29 days. Acute G T.	Bovine.
24	A B, 5/2/13	Mr. Kelly.	F., 24	Firm, caseous.	—	Direct + Guinea-pig +	1 G P, K 27 days. Slight G T.	Human.
25	J W, 11/2/13	Mr. Johnson.	M., 6	,, ,,	No T B.	Guinea-pig +	1 G P, K 32 days. Slight G T.	Human.
28	—, 20/2/13	Dr. H. Drummond, Newcastle.	M., 6	Caseous, softened.	2 T B.	Direct + Guinea-pig +	1 G P, D 25 days. Severe local T. Slight G T.	Bovine.
31	—, 27/2/13	,,	F., 30	Firm, caseous.	A few T B.	Direct – Guinea-pig +	1 G P, K 32 days. Slight G T.	Human.
33	—, 6/3/13	Charing Cross Hosp.	M., 16	Caseo-necrotic patches.	No T B.	Guinea-pig +	1 G P, K 58 days. Moderate G T.	Human.
34	—, 6/3/13	Dr. Drummond,	M., 26	Firm, caseous.	No T B.	Direct + Guinea-pig +	1 G P, K 26 days. Moderate G T.	Human.
35	K H, 10/3/13	Victoria Hosp., Chelsea.	F., 8	Caseous and gritty.	Scattered T B.	,, ,,	1 G P, K 25 days. Local T only.	Human.
36	—, 21/3/13	Charing Cross Hosp.	F., 18	Slightly caseous.	1 T B.	,, ,,	1 G P, D 43 days. Moderate G T.	Human.
37	(S D, 667) 27/3/13	Dr. Turnbull.	F., 18	Large, extensively caseous and softening.	No T B.	,, ,,	1 G P, K 41 days. Severe G T.	Bovine.
38	J L, 29/3/13	Victoria Hosp., Chelsea.	F., 5	Caseo-calcareous.	Moderate number T B mainly short.	,, ,,	1 G P, K 60 days. Moderate G T.	Bovine.
39	—, 12/4/13	Charing Cross Hosp.	F., 19	Caseous, softening.	No T B.	Guinea-pig +	2 G Ps, 41 and 53 days. Moderate G T.	Human.
40	J S, 23/4/13	Victoria Hosp., Chelsea.	F., 4	,, ,,	Moderate number short T B.	Direct – Guinea-pig +	1 G P, K 47 days. Slight G T, but nearest glands very caseous.	Bovine.
43	M H, 24/6/13	Charing Cross Hosp.	F., 31	Caseous, firm.	No T B.	,, ,,	2 G Ps, K 60 days. Chronic G T.	Human.
44	S McM, 3/7/13	Victoria Hosp., Chelsea.	M., 3	Small, firm, caseous patches.	Numerous T B, mainly short.	Direct + Guinea-pig +	2 G Ps, 23 and 39 days. Moderate G T.	Bovine.
46	M M, 14/10/13	Mr. Johnson.	F., 17	Caseous, softened.	No T B.	Direct – Guinea-pig +	2 G Ps, 30 and 42 days. Moderate G T.	Human.
47	M B, 16/12/13	Prof. Teacher, Glasgow.	F., 14	One gland showed a patch of caseation.	No T B.	Direct contaminated. Guinea-pig +	2 G Ps, 25 and 39 days. Moderate G T.	Bovine.
48	J McD, 28/12/13	,,	M., 18	Caseous, breaking down.	No T B.	Direct contaminated. Guinea-pig +	2 G Ps, 21 and 43 days. Moderate G T.	Bovine.
49	J T, 7/1/14	Dr. Shennan, Edinburgh.	F., 22	,, ,,	No T B.	Guinea-pig +	2 G Ps, K 24 and 29 days. Moderate G T.	Bovine.
52	R W, 28/1/14	Carshalton.	F., 11	Caseous and softened.	No T B.	Direct – Guinea-pig +	2 G Ps, K 33 and 37 days. Slight G T.	Human.
53	A P, 29/10/13	Birmingham.	F., 1$\frac{2}{12}$	Caseous, softened.	—	Direct + Guinea-pig +	2 G Ps, K 45 days. G T.	Bovine.
55	—, 30/1/14	Dr. Sutcliffe, Margate.	F., 14	Material resembled granulation tissue.	1 vacuolated T B.	Guinea-pig +	1 G P, K 43 days. Slight G T.	Human.
57	A B, 3/2/14	London.	M., adult.	Firm caseous.	—	,,	2 G Ps, K 43 days. One was healthy. The other had a caseo-purulent inguinal gland only.	Human.

58	J W, 5/2/14	Dr. Mitchell, Edinburgh.	M., $2\tfrac{4}{12}$	Caseous and softened.	Moderate number short T B.	Direct + Guinea-pig +	2 G Ps, K 28 and 42 days. Severe G T.	Bovine.
59	J F, 5/2/14	,,	F., 8	Caseous and softened nodules.	No T B.	Direct – Guinea-pig +	2 G Ps, K 33 and 43 days. Former showed slight T; latter no T.	Bovine.
61	H B, 5/2/14	Dr. Drummond.	F., 17	Hyperplasic.	No T B.	Guinea-pig +	2 G Ps, 33 and 62 days. Slight G T.	Human.
62	—, 6/2/14	Professor Teacher.	F., 9	Caseous, softening.	Moderate number T B, slender, majority short.	Direct + Guinea-pig +	2 G Ps, K 29 and 41 days. Moderate G T.	Human.
63	M H, 9/2/14	Dr. Mitchell.	F., 6	Caseous, breaking down.	Numerous T B, mostly short.	,, ,,	2 G Ps, D 20 and 21 days. Acute G T.	Bovine.
64	—, 12/2/14	Dr. Sutcliffe.	F., 7	Firm, caseous.	Scattered short T B.	Direct – Guinea-pig +	2 G Ps, 35 and 44 days. Severe G T.	Bovine.
65	A N, 14/2/14	Dr. Marsh, Macclesfield.	F., 17	Caseous, beginning to soften.	No T B.	,, ,,	1 G P, K 34 days. Slight G T.	Human.
66	S, 17/2/14	,,	F., 8	Caseo-purulent.	Moderate number short T B.	,, ,,	2 G Ps, 34 and 36 days. Severe G T.	Bovine.
68	—, 25/2/14	Dr. Sutcliffe.	M., 8	Caseo-purulent patches.	No T B.	Direct + Guinea-pig +	2 G Ps, 27 and 44 days. Moderate G T.	Human.
70	A G, 12/3/14	Dr. Mitchell.	F., 9	Firm and caseous.	No T B.	,, ,,	2 G Ps, D 24 and 31 days. G T not severe.	Human.
71	J H, 12/3/14	,,	M., 8	Slightly caseous.	Scattered short T B.	Guinea-pig +	2 G Ps, D 24 and 32 days. Severe G T.	Bovine.
72	G L, 12/3/14	,,	M., 1	Caseous, softening.	Scattered slender rather beaded T B.	,,	2 G Ps, 21 and 28 days. G T moderate.	Human.
73	T P, 13/3/14	Mr. Pybus, Newcastle.	M., 13	Purulent.	No T B.	,,	2 G Ps, D 25 and 36 days. Moderately severe G T.	Human.
74	—, 18/3/14	Dr. Robertson, Glasgow.	F., $\tfrac{6}{12}$	Granulation tissue scrapings.	No T B.	,,	2 G Ps, D 23 and 39 days. Severe G T.	Bovine.
75	M, 21/3/14	London.	F., 13	Caseous, softening.	Scattered slender T B, mostly short slight vacuolation.	Direct + Guinea-pig +	2 G Ps, K 33 and 37 days. Moderate G T.	Human.
76	C M, 21/3/14	Cambridge.	M., 8	Caseous, softened.	No T B.	,, ,,	2 G Ps, D 24 and 27 days. Slight and moderate G T.	Human.
77	G F, 21/3/14	,,	M., 41	Caseous, softening.	Moderate number short T B.	,, ,,	1 G P, D 32 days. Moderate G T.	Bovine.
79	M D, 28/3/14	London.	F., 14	Purulent.	No T B.	Guinea-pig +	1 G P, D 30 days. Moderate G T.	Human.
81	V H, 15/4/14	Cambridge.	F., 9	Caseo-purulent.	1 T B.	Direct + Guinea-pig +	2 G Ps, 29 and 40 days. Severe G T.	Bovine.
82	J E, 17/4/14	Mr. Pybus.	M., $2\tfrac{1}{2}$	Caseous areas.	No T B.	Guinea-pig +	2 G Ps, K 34 and 60 days. G T moderately severe.	Bovine.
83	A M, 17/4/14	,,	M., 9	Caseous, softening.	No T B.	Direct + Guinea-pig +	2 G Ps, K 35 and 60 days. Slight G T.	Human.
84	—, 22/4/14	Dr. Robertson.	F., 6	Caseous, softened.	Scattered short T B.	Guinea-pig +	2 G Ps, K 34 and 45 days. Severe G T.	Bovine.
85	—, 22/4/14	,,	M., 11	Scrapings from cervical glands.	—	,,	1 G P, K 31 days. Moderate G T.	Human.
86	A B, 22/4/14	Cambridge.	M., 13	Caseous.	No T B.	Direct + Guinea-pig +	2 G Ps, D 31 and 40 days. Severe G T.	Bovine.
87	McG, 24/4/14	Dr. Robertson.	F., 4	Caseous, softening.	Numerous short T B.	Guinea-pig +	2 G Ps, K 35 and 68 days. Slight and moderate G T.	Bovine.
88	—, 5/12/13	Dr. Sutcliffe.	F., 25	Caseous.	Moderate number beaded T B.	Direct +	2 G Ps, K 24 days. G T.	Human.
89	—, 29/4/14	Dr. Robertson.	F., 11	—	1 T B.	Guinea-pig +	2 G Ps, 33 and 66 days. Severe G T.	Bovine.
90	—, 1/5/14	,,	M., 5	Abscess of axilla.	No T B.	Direct + Guinea-pig +	2 G Ps, K 41 days. Severe G T.	Bovine.
91	A S, 6/5/14	Dr. Mitchell.	M., 6	Caseo-calcareous tubercle.	Scattered short T B.	Guinea-pig +	1 G P, K 63 days. Severe G T.	Bovine.
94	P M, 19/5/14	London.	M., 14	Caseous, softening.	No T B.	,,	2 G Ps, K 31 and 45 days. Severe G T.	Bovine.
95	L P, 10/1/14	Birmingham.	F., 13	—	A few T B.	Direct + Guinea-pig +	1 G P, D 41 days. Slight G T.	Human.
98	L B, 26/5/14	London.	F., 23	Caseous, softened.	No T B.	Guinea-pig +	2 G Ps, K 43 and 48 days. Slight G T.	Human.
100	W, 29/5/14	Mr. Pybus.	F., 25	Small caseous areas.	No T B.	Direct +	2 G Ps, 75 days. Chronic G T.	Human.
101	B C, 5/6/14	,,	F., 8	Firm, caseous.	No T B.	Direct + Guinea-pig +	2 G Ps, K 36 and 61 days. Moderately severe G T.	Human.
102	—, 6/6/14	Dr. Sutcliffe.	M., 11	Caseo-purulent.	3 T B.	,, ,,	2 G Ps, K 35 and 60 days. Slight G T.	Bovine.
106	T B, 15/7/14	Cambridge.	F., 20	Firm, caseous.	2 T B.	,, ,,	3 G Ps, 27 to 51 days. Moderate G T.	Human.
107	I McD, 12/8/14	Mr. Rutherford, Glasgow.	F., 19	,, ,,	No T B.	,, ,,	1 G P, K 84 days. Chronic G T.	Human.

G P = Guinea-pig. T B = Tubercle bacilli. G T = General tuberculosis. T = Tuberculosis. + = Positive result. – = Negative result.
I am indebted to Mr. Waterhouse for the material from the Victoria and Charing Cross Hospitals, and to Dr. Malden for that from Cambridge.

TABLE II.—*Tabular Summary of Experiments on Rabbits with Eugonic Strains. All Inoculated Subcutaneously.*

No. of case.	Derivation of culture.	Dose in milli-grammes.	Number of rabbit.	Weights of rabbits in grammes.		Duration of life.	Post-mortem results.				
				Initial.	Final.		Local lesion.	Adjacent glands.	Lungs.	Kidneys.	Other organs or glands.
1	Through G P.	50	320	2970	2850	Days. 101	Caseous cyst.	Extensively caseous.	Numerous firm caseating nodules, discrete and confluent. (Eugonic culture isolated.)	Scattered caseating tubercles. (Eugonic culture isolated.)	1 caseous tubercle loosely attached to capsule of spleen.
	Through rabbit 320 (lung).	10	577	2000	2490	90	Caseous and softened.	1 caseous nodule in one.	1 hempseed-sized caseous nodule.	—	—
3	Direct.	30	328	2670	2570	98	Caseous cyst.	Partly caseous.	Scattered miliary tubercles and 6 caseating nodules up to split pea.	1 submiliary caseous tubercle in one.	—
4	,,	37	321	2420	2270	101	Caseous and softened.	—	Numerous grey tubercles and several patches of aggregated tubercles containing caseous foci on the surface; scattered tubercles in depth.	—	—
10	,,	25	407	1740	1750	129	Caseous cyst.	—	Moderate number caseating nodules up to 2·5 mm., mainly on dorsal surfaces, and 2 small marginal caseating patches.	Numerous minute surface pits; a few minute cortical tubercles; yellow focus in one papilla.	—
13	Through G P.	10	452	2190	2500	127	Caseous, very small.	—	—	—	—
24	Direct.	12·5	517	2450	2720	105	Caseous cyst.	Enlarged; not caseous.	Dorsal surfaces covered with superficial grey nodules showing scanty caseation; elsewhere scattered tubercles.	—	—
25	Through G P.	15	566	1900	2190	96	,,	1 caseous nodule.	Margins tuberculous; discrete tubercles elsewhere.	2 submiliary grey-white tubercles.	1 testis and epididymis showed early tuberculosis.
31	,,	20	567	2800	2960	96	,,	—	Scattered caseating nodules and a few small marginal and superficial caseating patches.	1 grey-white tubercle.	—
33	,,	10	1048	1570	1580	95	,,	—	Moderate tuberculosis, superficial nodules and patches chiefly.	A few tubercles in each.	—
		10	1049	1260	1950	95	,,	—	Slight tuberculosis.	—	—
34	Direct	10	568	1340	1840	114	Caseous nodules.	—	A few tubercles and small marginal caseating patches.	—	—
35	,,	10	569	1850	2040	114	Caseous cyst.	—	6 grey tubercles.	—	—
36	,,	10	576	1810	2600	92	,,	—	,,	—	—
39	Through G P.	10	612	1730	2340	97	,,	—	,,	—	—
		10	613	2230	2530	97	,,	—	3 submiliary tubercles.	—	—
43	,,	25	816	1570	1310	118	,,	1 caseous.	Scattered tubercles and superficial caseating patches.	—	—
46	,,	10	878	1640	1710	130	,,	Caseous nodules in 1	About 18 caseating patches up to 1 cm.	1 grey tubercle.	—
	,,	10	879	2050	2100	130	,,	—	Scattered submiliary tubercles and marginal caseating patches.	—	—
52	,,	10	1002	1280	1880	109	Caseous, small.	—	A few tubercles.	3 tubercles.	—
	,,	10	1003	1660	1800	109	Caseous cyst.	—	Mainly composed of solid grey, slightly caseous substance.	6 submiliary tubercles.	—
55	,,	10	968	2030	2180	91	,,	A caseous tubercle in 1.	Moderately numerous caseating tubercles and nodules up to 1 cm. (Eugonic culture isolated.)	6 to 8 grey-white tubercles in each.	1 submiliary tubercle in spleen.
	,,	10	969	1750	2220	91	,,	Caseous.	About a dozen tubercles and small marginal caseating patches	—	—
57	,,	24	1172	2100	2900	117	,,	—	A few small nodules and marginal caseating patches.	—	—
61	,,	10	1004	1280	900	86*	Caseous.	Caseous foci in 1.	3 tubercles.	—	—
	,,	10	1005	1690	2140	106	Caseous cyst.	—	A few caseating patches and tubercles.	—	—
62	Direct.	10	978	2070	2270	88	,,	—	About a dozen grey nodules up to 3 or 4 mm.	—	—
	,,	10	979	1520	1870	88	,,	—	2 caseous tubercles.	—	—
65	Through G P.	12·5	1117	2020	2200	119	,,	—	Caseating superficial and marginal patches and scattered nodules.	One caseous tubercle.	—
	,,	12·5	1118	1620	2030	119	,,	—	6 grey tubercles.	—	—
68	Direct.	10	1032	1800	2210	97	,,	—	—	—	—
	,,	—	1033	1400	1860	97	,,	—	—	—	—
70	,,	15	1131	1090	1720	114	Caseous, softened.	—	Scattered tubercles and a few marginal caseating patches.	—	—
	,,	—	1132	1270	2100	114	Caseous cyst.	—	A few submiliary grey tubercles.	—	—
72	Through G P.	10	1050	1350	1320	39*	Caseous.	Caseous.	A few tubercles.	A few submiliary tubercles.	
	,,	10	1051	1360	2050	95	Caseous cyst.	Watery cysts.	Scattered tubercles.	—	—
73	,,	10	1072	1660	2330	98	,,	1 caseous tubercle.	—	—	—
	,,	10	1073	1660	2270	98	,,	—	1 tubercle.	—	—
75	Direct.	10	1127	1730	2520	114	,,	—	—	—	—

	,,	12	1120	1350	1700	119	Caseous, nodular.	—			
79	Through G P.	10	1146	1750	2100	116	Caseous cyst.	—	Scattered tubercles.	One tubercle.	—
	,,	10	1147	1850	2130	116	Caseous.	—	Scattered tubercles and superficial and marginal caseating patches.	,,	—
83	Direct.	10	1129	1540	2210	114	Caseous cyst.	—	Scattered tubercles up to 2 and 3 mm.	—	—
85	Through G P.	10	1158	1770	2150	118	Scar.	1 caseo-purulent.	—	—	—
	,,	10	1159	1250	1980	118	Caseous cyst.	—	—	—	—
98	,,	10	1272	1860	2050	116	,,	Caseous.	4 grey tubercles and 4 small grey caseating patches.	—	—
	,,	10	1273	1580	1870	116	,,	,,	Scattered caseating nodules and marginal and superficial caseating areas.	One tubercle.	—
100	Direct.	10	1196	1430	2320	119	,,	1 caseous.	3 grey tubercles.	—	—
	,,	10	1197	1310	2120	119	,,	1 contained a calcareous focus.	Small reddish grey caseating patches.	—	—
101	,,	10	1237	1940	1970	104	,,	—	6 dozen tubercles.	—	—
	,,	10	1238	1950	1990	104	Caseous, softened.	—	—	—	—
106	,,	12·5	1296	1970	2160	107	Caseous cyst.	—	Scattered miliary tubercles.	—	—
	,,	12·5	1297	1370	1730	107	,,	1 slightly caseous.	Scattered tubercles and small grey patches.	—	—
107	,,	10·0	1312	1600	2000	107	,,	—	Scattered tubercles and superficial and marginal patches.	One tubercle and numerous surface pits.	—
	,,	10·0	1313	1750	1720	107	,,	—	Widespread superficial tuberculosis; few nodules in the depth.	Two tubercles and numerous surface pits.	—
88	,,	20·0†	490	1770	1650	100	Small caseous lesion.	Caseous foci.	A few small caseous nodules.	3 tubercles.	—
	,,	10·0	471	1670	1450	100	,,	—	,, ,,	—	
96	,,	20·0	1192	2260	2850	108	Caseous cyst.	—	2 tubercles.		

* Those marked with an asterisk died naturally. All the others were killed. † Broth culture.

TABLE III.—*Tabular Summary of Subcutaneous Experiments on Rabbits with Dysgonic Strains.*

No. of case.	Derivation of culture.	Dose in milli-grammes.	No. of rabbit.	Weight in grammes.		Duration of life in days.	Result.
				Initial.	Final.		
2	Direct.	10	359	2100	1650	70	G T
	,,	10	360	1590	1200	42	G T
5	Through G P.	10	361	1490	1020	41	G T
	,,	10	362	1660	1290	51	G T
11	,,	10	436	2590	1612	59	G T
	,,	10	437	1280	720	38	G T
14	,,	10	456	1610	1280	26	G T^1
	,,	10	525	2960	2260	72	G T^2
	,,	10	753	1420	1190	50	G T
	,,	10	754	1600	1150	42	G T
19	,,	10	519	2060	1470	87	G T
	,,	10	520	2000	1300	58	G T
	Direct.	10	542	1890	1600	40	G T
	,,	10	543	1520	1400	32	G T
20	Through G P.	11	575	1700	1540	76	G T
	,,	10	741	1490	1030	39	G T
	,,	10	742	1410	1100	16	E G T^3
23	,,	10	541	1710	1650	38	G T
	,,	10	696	1250	960	63	G T^4
	,,	10	697	1320	1160	48	G T
28	Direct.	9	542	1430	1400	40	G T
	,,	10	543	1520	1400	32	G T
37	Direct.	10	608	2150	1630	42	G T
	,,	10	609	1510	1150	48	G T
38	,,	10	648	2410	1660	50	G T
	,,	10	649	2570	1550	61	G T
40	Through G P.	10	707	2100	1470	43	G T
	,,	10	708	1700	1170	57	G T
44	Direct.	10	755	1970	1100	39	G T
	,,	10	756	2070	1430	73	G T
47	Through G P.	10	951	2240	1400	69	G T
	,,	15	1021	1800	1420	45	G T
	Rabbit 1021 (spleen).	9	1233	1940	1280	52	G T
	Rabbit 1233 (kidney).	5	1407	1740	1500	44* (ill)	G T^5
48	Through G P.	10	1022	1660	1040	35	G T
	,,	10	1023	1150	870	28	G T
	Rabbit 1022 (portal gland)	5	1234	2340	2040	52*	G T
	Rabbit 1234 (kidney).	5	1408	1620	1450	41	G T^6
49	Through G P.	10	986	1810	1520	48	G T
	,,	10	987	1310	930	28	G T (mo l.)
58	Direct.	10	1142	1600	1050	50	G T
	,,	10	1143	1660	1300	86	G T^7
59	Through G P.	10	1013	1650	1160	60	G T
	,,	10	1014	1640	1770	57	G T
63	Direct.	10	1015	1700	1150	60	G T (mod.)
	,,	10	1016	1260	980	39	G T
64	Through G P.	10	1054	1240	1040	39	G T
	,,	10	1055	1290	1030	43	G T
66	,,	10	1056	1840	1160	71	G T
	,,	10	1057	1740	1320	65* (ill)	G T
71	,,	10	1165	2290	1700	61	G T
	,,	10	1335	1860	1260	48	G T
74	Direct.	10	1097	1650	1220	47	G T
	,,	10	1098	1900	1150	40	G T
77	,,	10	1144	1800	1310	63	G T
	,,	10	1145	1850	1245	70	G T
81	,,	10	1178	1570	1160	40	G T
	,,	10	1179	1570	1070	45	G T
82	Through G P.	10	1198	1340	990	33	G T
	,,	10	1199	1440	1070	52	G T
84	Through G P.	10	1235	1920	1470	47	G T
	,,	10	1236	1900	1800	67	G T
86	Direct.	10	1180	1590	1000	42	G T
	,,	10	1181	1420	960	33	G T
87	Through G P.	10	1200	1450	1400	54	G T
	,,	10	1201	1220	1000	19	E G T
	,,	10	1292	2480	1720	30	G T
	,,	10	1293	1370	1050	45	G T
89	,,	10	1205	1370	1350	35	G T
	,,	10	1206	1370	1250	35	G T
90	Direct.	5	1166	1570	1050	33	G T^8
	,,	10	1167	2000	1890	48	G T
	,,	10	1336	1600	1030	68	G T
91	Through G P.	10	1294	1430	1170	26	G T
	,,	10	1295	1430	1450	45	G T^9
94	,,	10	1207	1320	1000	27	G T
	,,	10	1208	1270	1030	32	G T
102	,,	10	1263	2130	1650	48	G T
	,,	10	1310	1780	1120	28	G T
	,,	10	1311	1930	1470	55	G T
53	Direct.	10	517	2050	1500	38	G T
	,,	10	518	2070	1440	56	G T

Note.—* Those marked with an asterisk were killed. All the others died. G T = General tuberculosis. G T^1 = General submiliary tuberculosis of moderate severity. G T^2 = General tuberculosis severe in lungs only; kidneys only slightly affected, liver and spleen normal; popliteal glands contained caseous tubercles, but others, excluding those nearest local lesion which were extensively caseous, were normal. E G T^3 = Early general tuberculosis, liver peppered with minute grey foci. G T^4 = General tuberculosis of moderate severity only. G T^5 = General tuberculosis (cultures from the portal and popliteal glands of Rabbit 1407 resembled the original culture in cultural characters). G T^6 = General tuberculosis (cultures from the kidney and popliteal gland of Rabbit 1408 resembled the original culture). G T^7 = General tuberculosis (not quite of full severity). G T^8 = General tuberculosis moderate. Death from pseudo-tuberculosis of liver. G T^9 = General tuberculosis not of maximum severity.

tuberculosis in guinea-pigs nor yield cultures. I am indebted to them for giving me the details of their experiments and for allowing me to include these five cases in my series.]

(For details of the cases referred to above see Tables I., II., and III.)

Of the several observers who have made bacteriological investigation of cervical gland tuberculosis one only (Duval[10]) claims to have isolated atypical tubercle bacilli. Duval isolated cultures from four cases of cervical adenitis of an unusual clinical type. Three of his cultures are classified as atypical —respectively human, bovine, and avian—and the fourth as a standard human strain. His atypical cultures bear no resemblance, judging from the information given as to cultural characters and virulence, to any of my atypical lupus strains, nor indeed to any tubercle bacilli hitherto described. As Duval's results are exceptional and without confirmation it is unnecessary to refer to them more particularly here. The cultures isolated from cases of cervical gland tuberculosis by other investigators who have given details of their experiments are clearly either of standard human or of standard bovine type. Whether or not any of Mitchell's cervical gland cultures varied from the standard in respect of virulence I am not able to judge, as this author has not given any details of individual rabbit experiments.

Relation of Macroscopic Characters of the Glands and Numbers of Tubercle Bacilli present to the Type of Infection.

In each case the macroscopical appearances of the glands on section have been recorded with the object eventually of determining whether or not these presented differences corresponding to the type of infection. Careful comparison has not revealed any macroscopical character which is peculiar to one type of infection. On the other hand, microscopical examination would appear sometimes to yield evidence indicating type of infection. When there are numerous short well-stained tubercle bacilli the probability is that a bovine infection is being dealt with. In the series yielding cultures there were numerous or moderately numerous short tubercle bacilli in eight cases, and in each of these cases bovine tubercle bacilli were isolated. In Oehlecker's series[2] of 14 cases there were numerous short tubercle bacilli in the only cases (4) which yielded bovine cultures. Bovine infections, however, are not always associated with numerous tubercle bacilli in the lesions. Seventeen of the cases from which bovine tubercle bacilli were obtained in culture showed no, or extremely few, tubercle bacilli microscopically. In human infections tubercle bacilli are usually very scanty. In only 2 out of 33 "human" cases in which microscopical examinations were made were tubercle bacilli found in moderate numbers.

Clinical Aspects.

The clinical information with which I have been supplied contains some features of interest which are briefly detailed in the abstracts below.

CASE 2.—Aged 23. Bovine infection. History of seven or eight years' trouble with glands on both sides of neck and in one axilla. She had been operated on altogether six times by Mr. Thelwall Thomas and Mr. Kelly. She stated that she was very fond of cows' milk and always drank it unboiled. Teeth very carious.

CASE 4.—Aged 39. Human infection. Twelve years' history. She had had five operations, exacerbation leading to operation all following confinement. Of four children, one suffered from chest trouble, one from tuberculous wrist, and a third from glands in the neck.

CASE 14.—Aged 19. Bovine infection. Four months' history. She had been in the habit of drinking cows' milk unboiled and had several very carious teeth. There was a large mass of glands beneath the left sterno-mastoid. Two years after operation she was seen by Mr. Kelly, who found only one small gland low down in the neck—not worth operation.

CASE 24.—Aged 24. Human infection. Five years' history. Had had three operations.

CASE 46.—Aged 17. Human infection. Glands noticed only two months before operation. She had been under treatment for some time with well-marked signs of cavity in left apex.

CASE 47.—Aged 14. Bovine infection. Enlarged submental glands for some years, and abscesses had formed and burst three times.

CASE 48.—Aged 18. Bovine infection. Three years' history. Two operations.

CASE 62.—Aged 9. Human infection. Chronic enlargement of cervical and axillary glands, both sides, for two years. Had had three operations. Many carious teeth when first seen.

CASE 68.—Aged 8. Human infection. Case of old empyema. Axillary glands affected on side of operation for resection of rib.

CASE 74.—Aged 6/12. Bovine infection. There was also a tuberculous lesion of the hand.

CASE 77.—Aged 41. Bovine infection. Five years' history. There were enlarged glands in both posterior triangles and both tonsils were enlarged. He had been accustomed to drink unboiled cows' milk. Eleven months after operation he writes to say that his neck was fuller than ever of glands.

CASE 81.—Aged 9. Bovine infection. Child said not to have taken milk except in puddings. After the operation a small swelling appeared under the site of operation, but after a time this began slowly to dwindle and further operation was considered unnecessary. The general health of the child was good. There was no family history of tuberculosis.

CASE 86.—Aged 13. Bovine infection. About six weeks' history. Large mass of glands on left side of neck. Patient died at end of operation from heart failure. The post-mortem examination showed perihepatitis and perisplenitis, and greatly enlarged caseous mesenteric glands.

In a few other cases, both human and bovine, it has been ascertained that the operation was completely successful and that there had been no recurrence. Of 11 cases in which it was stated that there was no family history of tuberculosis, 3 yielded human tubercle bacilli and 8 bovine tubercle bacilli. Family history of tuberculosis was given in 2 cases; one of these was infected with human, the other with bovine tubercle bacilli.

Statistical Data.

For the purposes of this section I shall utilise only those cases which yielded cultures and which are believed to be primary in the cervical glands. Three of the 71 positive cases must therefore be excluded. One (No. 46) was a case of cervical adenitis which was probably secondary to tuberculous disease of the lungs. The other two (Nos. 68 and 90) were cases of tuberculosis of the axillary glands, the cervical glands being unaffected. There remain 68 cases of cervical gland tuberculosis, presumed to be primary in the cervical glands, of which 35 yielded cultures of human tubercle bacilli and 33 cultures of bovine tubercle bacilli. The case (No. 52) in which the femoral glands were the original material is included in the 68 cases, because the cervical glands were also tuberculous.

Table IV. shows the relative incidence of human and bovine infections at various age-periods in this series of 68 cases.

TABLE IV.

Age-periods.	Number infected with— Human T.B.	Number infected with— Bovine T.B.	T.B. dead in—
Under 5 years	1 (10·0%)	9 (90·0%)	6 (37·4%)
5 to 10 years	7 (39·9%)	11 (61·1%)	8 (30·7%)
10 to 15 years	8 (61·5%)	5 (38·5%)	5 (27·7%)
15 to 20 years	6 (60·0%)	4 (40·0%)	2 (16·6%)
20 and upwards ...	13 (76·5%)	4 (23·5%)	5 (22 7%)
Totals	35 (51·5%)	33 (48·5%)	26 + 3 in which age not stated (30%).

The proportion of bovine infections is highest in children under 5 years of age and lowest in adult life. The incidence on adults is not, however, unimportant. The percentage of adults over 20 years of age infected with bovine tubercle bacilli is in fact remarkably high, and is higher than has been recorded in any other series of cervical gland cases or in any other variety of tuberculosis in the adult.

In the next table (V.) the cases are analysed in accordance with the locality from which they were derived.

TABLE V.

Locality.	Under 5 years. H	Under 5 years. B	5 to 15 years. H	5 to 15 years. B	15 and upwards. H	15 and upwards. B
London	—	4	6		8	3
Margate	—	—	1	2	1	—
Cambridge	—	—	1	2	1	1
Birmingham	—	1	1	—	—	—
Macclesfield	—	—	—	1	1	—
Liverpool	—	—	—	—	3	2
Newcastle	—	1	3	1	4	—
Glasgow	—	2	2	3	1	1
Edinburgh	1	1	1	4	—	1

H = Human infections. B = Bovine infections.

The figures are not large enough for comparative statistical purposes as between different centres of population, but set out in the above manner they show quite clearly that none of the localities investigated enjoys freedom from risk of infection with bovine tubercle bacilli.

More reliable percentage figures are obtained by combining the cases into three groups, to represent respectively London and district, the rest of England, and Scotland. These figures are exhibited in Table VI., and for purposes of comparison the principal American and German figures, the total cases reported in all countries down to July, 1912, and Mitchell's figures for Edinburgh are set out in similar fashion.

The American, German, and combined figures are taken from the tables compiled by Park and Krumwiede.[11]

The table shows that in my series the proportion of persons infected with bovine tubercle bacilli in London and district and the rest of England is much about the same, while in Scotland the proportion is much higher. The Scotch figures afford corroboration of the conclusion arrived at by Mitchell as a result of his investigations of cervical gland tuberculosis that infections with bovine tubercle bacilli in this variety of tuberculosis are very prevalent in Edinburgh. Mitchell's inquiries were confined to persons aged 12 years and under. My figures suggest the importance of making in Scotland a more extended investigation of cervical gland tuberculosis in adolescents and adults.

TABLE VI.

Country.	Under 5 years. H	Under 5 years. B	5 to 15 years. H	5 to 15 years. B	15 and upwards. H	15 and upwards. B
England — London and district ...	—	4 (100·0%)	7	5 (41·6%)	9	3 (25·0%)
England — Rest of ...	—	2 ,,	5	4 (44·4%)	9	3 (25·0%)
Scotland	1	3 (75·0%)	3	7 (70 0%)	1	2 (66·6%)
America	6	16 (73·0%)	23*	15 (40·0%)	14†	1 (6·6%)
Germany	7	4 (36·3%)	8*	4 (33·3%)	12†	0
Total cases reported down to July, 1912 ...	15	24 (61·0%)	36*	22 (38 0%)	36†	1 (2·7%)
Edinburgh (Mitchell, 1914)	3	35 (92·0%)	4†	30 (88·0%)	—	—

* 5 to 16 years. † 16 and upwards. ‡ 5 to 12 years.

The proportion of bovine infections in cervical gland tuberculosis in England, while less than that in Scotland, is higher than it is in other countries. Of the four countries for which there are separate data in Table VI. Germany gives the lowest percentages of bovine infections. There is not much difference between the English and American percentage figures (respectively 55·5 and 51·7) for persons under 15 years of age, but for persons over 15 years of age the proportion of cases in which the infection was "bovine" is considerably lower in America than in England.

The greater part of the work here reported on was done during my tenure of one of the scholarships of the Grocers' Company and with funds supplied partly by the Grocers' Company and partly by Professor G. Sims Woodhead. In recent months the expenses of the inquiry have been borne by the Medical Research Committee. I desire to acknowledge my indebtedness to these sources for the means, and to Professor Woodhead for the use of the Pathological Department of the Field Laboratories, University of Cambridge, to carry out the bacteriological work.

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Cambridge.

ROYAL NATIONAL SANATORIUM, BOURNEMOUTH.—The committee of management of this institution have under consideration a scheme for forming a "sanatorium colony" in conjunction with the present institution. It is proposed that a piece of land, about seven or eight miles from Bournemouth, should be acquired on which could be erected simple buildings to accommodate 40 patients. To this colony could be drafted all patients who, after careful selection, were considered suitable for employment on various grades of work. The advantage of the scheme would be the separation of advanced cases from those only slightly affected. The cost of the scheme will be between £3000 and £5000, but this is less than the accumulated surplus income of the sanatorium during the past three years. The result of the deliberations of the committee of management will be submitted to a special meeting of the governors.

NOTES ON RHEUMATISM IN CHILDREN.[1]

By MARY H. WILLIAMS, M.B., B.S. Lond.,
D.P.H. Camb.,
SENIOR MEDICAL INSPECTOR OF SCHOOLS FOR WORCESTERSHIRE.

It is hardly possible to read a medical journal of any description without coming across an article on some form of tuberculosis, and recently legislation has even more strongly called attention to its importance. Mothers are willing to take much trouble for their children if one tells them the child is tuberculous, so thoroughly are they imbued with terror of this disease. But I am inclined to believe that in England as much, or more, misery is caused by the disease we call rheumatism, and each year I live I find cause to study some fresh manifestation of this widespread disease.

The laity commonly regard rheumatism as a disease of the elderly, and believe that its chief harm lies in the pain it causes. I believe that it is a disease which almost always begins in early childhood, and that in its crippling effects it is second to none. It is responsible for a large amount of heart disease and for an infinitely larger number of cases of ill-health which are frequently labelled "debility." The common view as regards the sequence of events appears to be that "growing pains" come before the heart is affected. Dr. R. Hutchison writes[2]: "If they [the growing pains] are neglected the child ...... may very easily slide into endocarditis," but I hope to show that the germ commonly first attacks the heart and only later causes symptoms in muscles and fasciæ.

The little I know about rheumatism in children has been learnt almost entirely in my work in the schools, for, with the exception of Dr. F. J. Poynton's book, there is not much to be learnt about it from current literature. So I have had to formulate my own views, and hence must ask for indulgence if I differ from any of my audience. My views have developed as the result of watching given children for long periods, 5, 6, 7, or even more years, and noting how one condition precedes, and passes into, another.

I started school work in 1904, believing that there was very little rheumatism in children. The first method I used to ascertain if a child was rheumatic was to ask if he ever had "growing pains," and I was absolutely startled to find how many children gave a definite affirmative answer to the direct question. A few had volunteered this information before I started asking directly. Then came the question as to whether "growing pains" always connote rheumatism, and this forces me to what I should like to avoid—a definition. So I will shortly define rheumatism as the disease due to an infection with a specific micrococcus, probably that described by Poynton and Paine or one closely related to it. The syndrome of rheumatism includes symptoms due to lesions in the musculature and valves of the heart, pains in joints and muscles, abnormal excitability of nerves and brain shown in some cases by actual chorea, anæmia, with continued pyrexia. I regard malignant endocarditis as being commonly a severe form of septicæmic rheumatism, though quite recognising that in a few cases other germs are the primary cause.

Taking this definition to work upon, I believe that in young girls aching of the legs, which occurs both by night and by day, is almost always due to rheumatism. In boys I am inclined to think that a certain amount of aching can be caused by strenuous games even without rheumatism. But true rheumatic "growing pains" are generally worse after exercise, and at first may occur *only* after exercise. In many cases they are worse at night, and in such cases the diagnosis is at once clear. Also if they occur only, or chiefly, in wet weather they are due to the rheumatic toxin. Aching of the legs due to syphilis may occur, but I do not think that it is frequent in children. The aching which occurs during or before menstruation also needs mention, but can easily be differentiated by a few questions. Apart from these forms of aching there also needs to be differentiated a somewhat uncommon condition, aching of the joints or muscles due to the tubercular toxin, a tuberculous arthritis. So-called arthritis sicca, a dry form of tuberculous arthritis, has long been recognised, and this is sometimes, though by no means always, accompanied by pain. This condition is most easily recognised in the shoulder, because when auscultating the back one hears a dry crepitant sound, and on placing a hand on the shoulder one feels a creaking sensation. The creaking is produced in the muscle and can be lessened, or obliterated, by the arm being drawn backwards. Later there may be grating in the joint, but the early sounds are, I believe, distinct in origin. I believe this condition is practically always due to a tuberculous infection and not a rheumatic one.

The "growing pains" are the symptom most commonly recognised as due to rheumatism, but they are by no means the earliest or the most important. The typically rheumatic child can be differentiated by the age of 5, and, for all I know, far earlier. The reason why I name this age is because I see far more children at 5 than earlier, and I also find that the examination of children grows gradually more and more difficult as we come to deal with them at the earlier ages. At 5, such a child is often well nourished, perhaps somewhat thin, but one in regard to whom no complaint is made by the mother unless she says either that he is nervous or is "mincing" with his food. On examination, one obtains a history of rheumatism in the relations. When one takes the child on one's knee in order to count the pulse, one at once notices that he is not for one moment at rest, some part of his body is in incessant movement. The hand is not kept still long enough to make it possible to count the pulse for 60 seconds consecutively, one has to count it in successive quarter minutes The hand is constantly making little, quick, jerky movements. And, without questioning, the parent will often remark that he is never still. Teachers complain that he fidgets. Then, on counting the pulse, one finds that it is above the rate of the child who has not acquired the rheumatic infection. So little work has been done on the pulse-rate that I carefully avoid the expression "the normal rate," but I have now many hundreds of records of five-year old children, and the children we are considering have a pulse-rate above that of tuberculous children, the rate often reaching 100 or over. Lately I have been seeing, for the second or third time, older children, in regard to whom the only note of abnormality made when they were first examined at 5 years was "tachycardia," and practically all of these are now definitely rheumatic. Moreover, this pulse-rate persists for years, and is not definitely higher on first taking. The variation is often extraordinarily small. I have notes where the variation shown over several years is only two or three beats per minute. In addition to the quick pulse-rate, such children frequently have continued pyrexia, with temperatures ranging from 99·4° to 100·4° F. It will be argued that this is due to "nervousness," but I now have records of some 5000 temperatures, and, as a rule, the second time of taking it is practically the same as the first. If the raised temperature were due to nervousness the second temperature would be lower than the first. This raised temperature persists for years throughout school life and the small amount of variation is remarkable. In work undertaken in collaboration with Professor Karl Pearson and Miss Julia Bell[3] we showed that this raised temperature is not merely due to age. Control takings were made at several public schools, both for boys and girls, and these showed that children of richer parents have not such raised temperatures.

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[1] A paper read at a meeting of the Registered Medical Women's Association, London, on May 11th, 1915.

[2] Lectures on Diseases of Children, 1913, p. 170

In a few cases, even as early as 5 years of age, growing pains are already present, but I regard these cases as of a more severe type than when the only signs are pyrexia, quick pulse, and nervousness. On inspection the heart's impulse is often widely visible, and on palpation it gives to the fingers a sensation of fluttering. On auscultation one finds that the common trouble at the bases of the lungs (which occurs at an earlier age and which I believe to be of tuberculous origin) has nearly cleared up, and often far more completely cleared up than in a child of a non-rheumatic family. There may be high-pitched expiration or harsh breathing. The apex beat may be outside the nipple line, which is not the case in non-rheumatic children. At a recent discussion at which various cardiac specialists took part, the ordinary position of the apex beat in children was discussed, and opinions varied as to whether it is within, or without, the nipple line. I think that the difficulty came from the fact that in rheumatic children it is often in or outside the nipple line, and there are so many such children in any hospital clinic, recognised or unrecognised, that statistics based on such figures, obtained without definite exclusion of rheumatic children, ought not to be regarded as representing facts concerning healthy children.

In some cases the cardiac sounds are altered, a muffling being perhaps the most common change, but I do not often hear bruits indicating actual valvular roughening. At this stage I think that the change consists in a weakening of the myocardium, which I believe to be toxic, but which it is possible may some day be shown to be due to actual rheumatic nodules in the musculature of the heart. This is the stage when, I believe, further development of rheumatism can be prevented, and, if this occurs, little permanent change remains. But, unfortunately, except in the children of the rich, the existence of the disease is not recognised at this age and hence the later stages are so appallingly frequent.

At some age between 5 and 12, a common symptom is abdominal pain, and also, I believe, attacks of appendicitis, almost always labelled "bilious attacks." In 3 out of 7 attacks, of which I have notes, there was a definite rigidity over the appendix. In 8 patients whom I questioned directly after they had been operated upon for appendicitis, I obtained, without leading questions, a history of bilious attacks in 7. I do not mean to suggest that the rheumatic germ is responsible for all attacks of appendicitis, but I think that "bilious attacks" in children generally precede recognised appendicitis, that they are, in reality, frequently slight attacks of appendicitis, and that both bilious attacks and appendicitis are more frequent in rheumatic children, or in persons with a rheumatic family history; and that it is at least possible that the same germ which causes the rheumatic nodules in the valves of the heart causes similar nodules in the region of the appendix. I gradually became so convinced by the cases I saw of some connexion between rheumatism and appendicitis that it has been a great pleasure to me to realise that other workers are also studying the subject from this aspect. In Poynton and Paine's book[4] an account is given of appendicitis produced in rabbits by the intravenous inoculation of diplococci grown from a case which was clinically rheumatic fever. The rabbits used were young, and the diplococci were recovered from the joints, the heart blood, and the peritoneal fluid.[5] In one case recorded, a patient with appendicitis had also some inflammation of a tonsil, and from both a diplococcus was obtained which appeared microscopically and culturally the same, and which gave rise to arthritis when injected into young rabbits.

That children in rheumatic families have frequent sore throats is well known, and many cases in consequence undergo operation on the tonsils. I should like to take the opportunity of protesting against enucleation of the tonsils. It is often said that guillotining is no good, for the condition recurs. For several years I have kept detailed notes of all the operation cases I have seen, most of them done by general practitioners, and I find that in the majority of cases, *if the operation is not done at too early an age*, the result is a cure; and I think whether it is or not, one has no right to remove organs until one is sure that their influence for good is less potent than their influence for evil. It is possible that the rheumatic germ grows in the tonsils, but, on the other hand, it has been argued[6] that the tonsils have a protective function. They may thus act as a barrier against rheumatism, and may only fail in this duty under repeated and severe attacks of the germ. If so, I think some portion should be left for defensive purposes.

The question as to whether chorea is or is not part of the rheumatic syndrome has been debated so many times, and the positive evidence is so great, that I think I need do no more than express my adherence to this view. If anyone is interested in working at the question further, I would be happy to afford facilities of studying my records of some thousands of cases which I regard as rheumatic, in regard to each of which is recorded the exact evidence on which the view was formed, and among the data would be found cases of chorea. I have no case of chorea as occurring in any but a rheumatic child, and I dissent from the view urged by Professor Poncet that the ordinary type of chorea is often caused by the tubercle bacillus.[7]

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[3] Drapers' Company Research Memoirs: Studies in National Deterioration, IX.; A Statistical Study of Oral Temperatures in School Children, with Special Reference to Parental Environment and Class Differences, by M. H. Williams, M.B., Prof. K. Pearson, F.R.S., and Julia Bell, M.A.

[4] Researches on Rheumatism, Poynton and Paine, 1913, pp. 366 et seq.

[5] Loc. cit., p. 374.

[6] Digby: THE LANCET, Jan. 20th, 1912, p. 160.

The mention of the tubercle bacillus brings me to a point at which I can state a theory which I have worked out—viz., that rheumatism and pulmonary tuberculosis are antagonistic and not active at the same time in the same child. Predisposition to rheumatism is strongly hereditary, and the figure based on my investigations has worked out at 0·46. I may say that the figure[8] for inheritance of stature is 0·51, for length of arm 0·5, and for insanity 0·47. Hence our heredity figure for rheumatism is strictly comparable to figures for other inherited characteristics. But, in addition, rheumatism in the parent appears to protect the child in a definite degree from pulmonary tuberculosis.[9] The antagonism between rheumatism and pulmonary tuberculosis has also been noticed by Sir Dyce Duckworth[10] and by Dr. R. H. Miller,[11] of Paddington Green Children's Hospital, and I have now thousands of records supporting this view.

But to come back to our rheumatic boy. By the time he is 12 he is probably in fair health but too thin, perhaps pale, and too easily out of breath. Also football or long walks cause leg aching. The apex beat is very likely to be found in or outside the nipple line. The impulse is very visible, far too diffuse, and on feeling it one is sensible of a kind of fluttering sensation. There may be a definite bruit with unmistakable involvement of the mitral valve. For many years I worried myself because at hospital it always seemed to me that everybody heard murmurs before I did, and I feared that I missed important lesions. Later, I had opportunities of comparing what I heard with what was heard by skilled auscultators, and so gradually learnt to know more. But for the consolation of any of the younger practitioners who may still feel as I did, I would say that, in children, not being able to hear murmurs does not matter. If there is enough wrong to need any degree of care the fact will be learnt more surely by the use of eyes and fingers than by the aid of the stethoscope. And if we trust more to our eyes and our fingers we shall, I hope, soon cease to talk of "functional" disease of the heart. The only definition of "functional" disease of the heart which I am willing to accept is the following: "A disease whose pathology I have not yet ascertained." The fact that the conditions, possibly the murmurs, in a child's heart are constantly changing is no reason for calling it "functional." If a sound is present one day and not the next it probably shows exhaustion of the muscle or activity of the rheumatic germ. So long as we call disease "functional" the inference is that it does not matter.

The sooner that we recognise that heart disease in a child is practically always due to rheumatism the sooner we shall get sufficient care taken to prevent the condition getting worse. In many congenital cases also I have obtained so strong a rheumatic family history, including disease in the mother, that I believe that here, also, rheumatism is often responsible.

Rheumatism is one of the commonest diseases of children and the most crippling in later life. But the disease does not now figure among those scheduled by the Board of Education, in spite of repeated attention being drawn to it by many doctors working in the schools. Heart disease is in the schedule, but not the disease of which heart disease is only a prominent symptom.

It does not yet appear to be sufficiently recognised that the rheumatic toxin is as capable of causing anæmia as the germ of tubercle or syphilis, and that in young people it is one of the commonest causes. In a recent interesting work, when writing of the anæmia of adolescence[12] Dr. Stacey Wilson separates "the anæmia definitely secondary to diseases such as phthisis and chronic nephritis" from "those which occur in the simple anæmia of adolescence" because "the cardiac phenomena are usually different." But I am gradually becoming convinced that the primary cause of many such "simple anæmias" is the continuous action during the years of childhood and adolescence of small doses of the rheumatic toxin, and environmental conditions supposed to be responsible for these anæmias are merely the causes which so increase the action of the toxin that symptoms are produced.

So far I have said nothing of treatment, and in regard to this matter I much hope to learn from those who have more practical experience of it than I. To my mind the riddle is unanswerable. The large proportion of the children in our schools have constant pyrexia; in rheumatic cases it is due to the rheumatic toxin, which at this age acts mainly on the heart. The first order I should like to give is, "Rest"; the second is, "Keep warm and dry"; and the third, "Good food." Yet I am in doubt which order is most hopeless.

The law compels the children of the poor to attend school in all weathers unless they can be proved to be definitely ill. Many of the country children have to walk two or three miles over fields or along wet muddy lanes, and then sit in cold schoolrooms. The cost of flannel makes the desirable form of clothing almost out of reach, and the small knowledge of cooking possessed by the women makes nourishing food a rarity. The wonder to me is not that a large number of our adults end their lives crippled with rheumatism, and a further large number die from heart disease, but that any of the poor escape the disease. I believe that we have something to thank tuberculosis for in that it renders some families more resistant to that disease which I consider the more deadly.

As regards the distribution of rheumatism, my figures show that rheumatism (as distinct from rheumatic fever) is more common in rural districts. So far as rheumatic fever goes, I have not found a greater frequency in urban than in rural areas.

When writing of valvular disease due to rheumatic fever, Dr. Harrison says[13]: "There is a special tendency to valvular disease in towns," and I have wondered if the frequency of slight rheumatism in children in the country districts is the *cause* of the comparative rarity of rheumatic fever in adults—i.e., is the early rheumatism an immunising process which protects from the more dangerous effects in the majority of cases? We often see it debated why mitral disease is so rarely found in post-mortem examinations on those dying from pulmonary tuberculosis. But if rheumatism and pulmonary tuberculosis are antagonistic, and mitral disease is generally due to rheumatism, then this absence of mitral disease would be bound to occur.

Colwall, Malvern.

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[7] La Tuberculose Inflammatoire, par A. Poncet et R. Leriche, 1912, p. 240.

[8] A Statistical Study in Oral Temperature, loc. cit., p. 45.

[9] Loc. cit., p. 52.

[10] Practitioner, January, 1912.

[11] Medical Diseases of Children, 1911.

[12] The Early Diagnosis of Heart-failure, Dr. Stacey Wilson, p. 226.

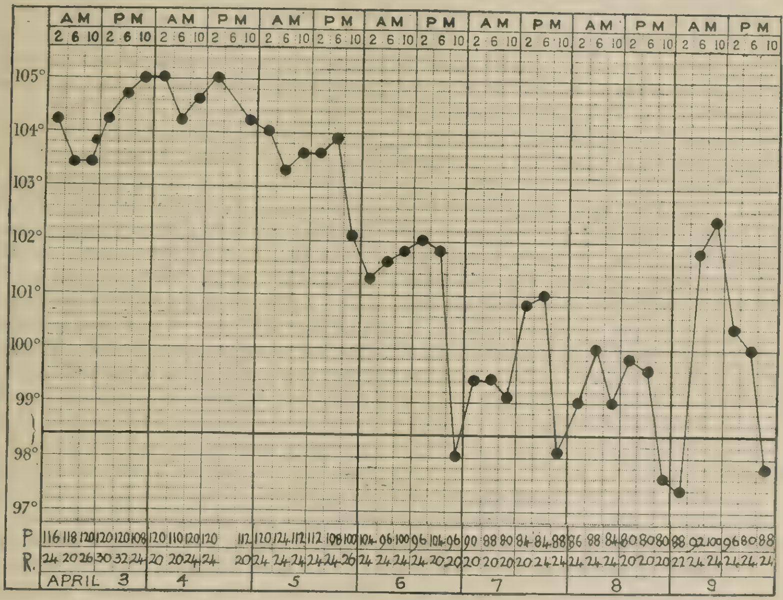
[13] Journal of the R.A.M.C., August, 1914.

A CASE OF TETRAGENUS SEPTICÆMIA.

By HENRY ROBINSON, M.A., M.D. CANTAB.,
TEMPORARY LIEUTENANT, R.A.M.C.

A PRIVATE soldier of three years' service and 23 years of age was admitted to hospital on March 18th, 1915, complaining of pain in the feet of about six days' duration, with steadily increasing malaise, weakness, and anorexia. He had also a slight headache and a very slight cough. There had been some abdominal pain at the commencement of the illness, but this passed off before the man came under observation. On admission he was constipated, as is not unusual in men who have been a long journey on an ambulance train. He had not vomited, and there had been no nose-bleeding or sore-throat.

The only account of previous illness was a fever of some kind in India about a year before. The patient had never had rheumatism. He had been three times inoculated against enteric fever, the last time nearly a year previously.



Four-hour chart from April 2nd to April 9th.

On admission he looked fairly comfortable; not flushed; no herpes. He was rather deaf, and in view of a subsequent occurrence it is regrettable that no inspection of the ears was made. The tongue was red at the edges and furred in the centre. Temperature 103°F. The pulse-rate was 120 on admission, but it dropped soon afterwards to under 100; regular, low tension; skin moist, no rheumatic smell.

On examination nothing abnormal was found in the lungs. The heart's apex was just internal to the nipple in the fifth interspace. A soft blowing apical murmur was present; heard also at the basal region. There was no abdominal distension, gurgling, tenderness, or rigidity; no spots. The spleen was doubtfully palpable. There was no swelling or redness of the feet, though they were tender when handled. A diagnosis of acute rheumatism was made, and 20-grain doses of salicylate of soda with equal amounts of bicarbonate were given four-hourly, together with a brisk purge. On the off-chance of the case being one of enteric fever blood was withdrawn from a vein for cultivation. It was submitted to Lieutenant M. K. Acheson, R.A.M.C., bacteriologist, who found it sterile.

Under treatment the temperature fell rapidly, and became absolutely normal after six days. On March 22nd the man was much better in every way, and it is noted that the apical first sound was then almost normal, but still slightly impure. On the 26th the murmur was once more in evidence, though in other ways the patient had improved. On the following day salicylate treatment was discontinued altogether; the dosage had already been cut down as the symptoms ameliorated. The diet was cautiously advanced and absolute recumbency was maintained. On March 31st there was a slight nocturnal rise of temperature, and next morning a sudden return of pain in the legs and malaise occurred, together with a temperature of over 103°. Soon afterwards a condition of apathy almost verging on coma set in. There was no swelling or redness of the joints. Large doses of salicylate were once more exhibited, but this time without the slightest effect. The cardiac murmur was still present. On April 3rd the man complained of pains in the ankles, shoulders, and spine, but nothing abnormal was detected on examination of those regions. The temperature was 104°, the pulse-rate was 128, and the cardiac murmur had entirely disappeared. No petechiæ or abscesses were present. A diagnosis of infective endocarditis was arrived at; a further sample of blood was taken for culture and the salicylate was discontinued.

On the following day (April 4th) the patient, who had originally been admitted into a surgical ward, was transferred to the medical division of the hospital, and until my own transfer about three weeks later I lost direct touch with him. During this time he was under the care of Lieutenant A. T. Todd, R.A.M.C., with whom I saw the man occasionally in consultation. The case notes were carried on by Lieutenant Todd, and I am indebted to him for the particulars of this part of the illness.

On April 4th, on taking over the case, Lieutenant Todd's notes state that the man was slightly cyanosed. He complained chiefly of pain over the pericardium and base of the left lung. A double mitral murmur was heard at the apex, which was tender. A cough began on this day, and patches of broncho-pneumonia were found in both lungs. The spleen was enlarged. Pulse 120, very weak and dicrotic; temperature 105°. The patient was very delirious. Quinine sulphate in heroic doses was ordered. On the 5th there was a distinct improvement. The cardiac murmurs were unchanged, but the temperature was lower, the pulse less weak and dicrotic, and the cyanosis had disappeared. On the 6th the improvement continued, though there was still some nocturnal delirium. On the 7th he felt better, though the pulse tension was still very low; there was copious mucopurulent expectoration. Lieutenant Acheson reported that the blood contained the micrococcus tetragenus. By the 10th the temperature was normal and the præcordial pain was much less; there was some blood mixed with the mucopurulent expectoration. On the 14th a general quinine rash was observed, and also a purulent discharge from the right middle ear, but the general condition was much improved and the cardiac murmurs were no longer heard. On the 16th pleuritic pain was present on the left side, and examination showed a small patch of consolidation, with crepitations and blood-stained sputum and a temperature of 100°. Quinine was once more freely pushed. This attack soon subsided, though the sputum was still stained six days later, when the patient was feeling much better and asking for food.

About this time Lieutenant Todd left for the front, and the patient came once more under my care. I found the heart sounds normal, the cough practically gone, and, apart from weakness, hardly any morbid signs except aural discharge. From this pus Lieutenant Acheson had cultivated a coccus which grew both in pairs and in fours. He was inclined to regard it as the same organism (tetragenus) as that which he had already recovered from the blood. On April 27th the patient developed slight femoral thrombosis on the left side. On May 5th it is noted that the ear had ceased to discharge and the heart sounds were normal, but there was still tenderness, and a hard cord was still palpable along the line of the femoral vein. A few days later the patient was transferred convalescent to a hospital ship.

The exact sequence of events in the pathology of this case is not absolutely certain. The original attack seemed to respond satisfactorily, though not immediately, to salicylate treatment. It may have been true acute rheumatism; alternatively it is arguable that it was really even then a tetragenus infection. When the first relapse took place the diagnosis of infective endocarditis supervening on a simpler rheumatic lesion seemed inevitable, and a bad prognosis was formed. The temperature chart alone would suggest a pneumonia, but it was only after two or three days of high pyrexia that cough and pulmonary signs developed. The middle-ear abscess may have been pyæmic in nature. It would have been of great advantage in deciding this point if the ears had been examined for old perforations on the patient's first admission.

Fortunately Lieutenant Todd had had experience of tetragenus pneumonia at the Royal Victoria Hospital for Sick Children, Edinburgh, where he had found quinine of great value. He had already adopted the same drug in this case before the bacteriological finding was known, and in view of the upshot it would be certainly worth while to treat any future case in the same way. Such textbooks of bacteriology as are available on the spot here are practically silent on the pathogenicity to man of the micrococcus tetragenus, and I was very fortunate to find in Lieutenant Todd a colleague with first-hand knowledge of the tetragenus pneumonia, which occasionally attacks children. Even he, however, had not met with a case of blood infection by this organism, so I have thought it worth while to place this case on record in spite of the fact that I am not in a position to give any references to similar cases that may have already been published.

I tender thanks to Lieutenant Todd and Lieutenant Acheson for their valuable help.

NASAL FLAP AND MODIFIED LANGENBECK OPERATIONS FOR CLEFT PALATE.

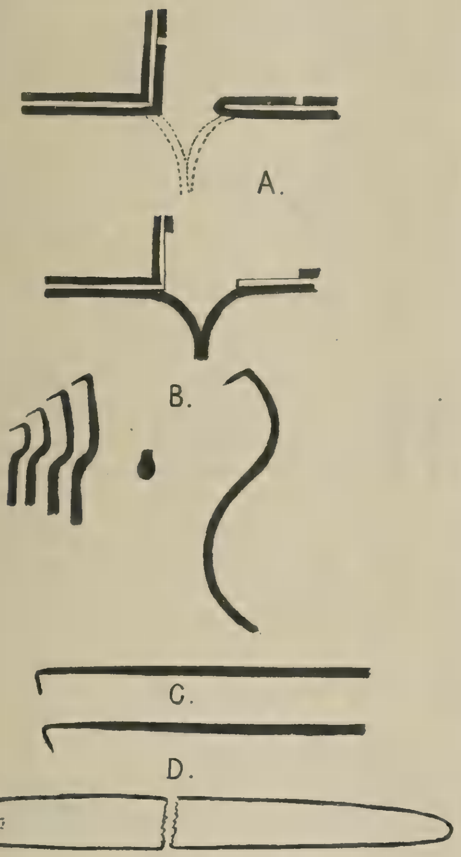
BY G. S. THOMPSON, F.R.C.S. ENG.

ONE of the commonest and most annoying sequelæ of palate operations is the yielding of the line of union, partly from infection, more especially when tension is present, the absolute and universal elimination of tension still being a desideratum that has not yet been realised. By the following operation and technique this defect, particularly in the case of the hard palate, which is the chief offender, can, I think, be satisfactorily overcome in most or all cases. The principle of the operation is the elimination of tension, the reduction of trauma and interference with the blood-supply by the use of flaps obtained from the upper aspects of hard and soft palates, which being turned down into the mouth are united in a V-shaped manner. The raw surfaces of the flaps are apposed, as well as the line of section, thus affording a firmer and more certain bond, and therefore reducing the likelihood of mal- or non-union. A graduated series of knives and raspatories make any width of flap desired to be obtained; moreover, the width is thereby maintained the same throughout. The width of flap required having been decided on the requisite knife is inserted from the mouth through the cleft, then drawn with some force through the muco-periosteum, from end to end, the shaft of the knife being kept in contact with the bony edge of the cleft. The flap thus demarcated is then separated from the nasal surface of the hard palate, drawn inwards and turned down through the cleft into the mouth. The raw surfaces are apposed and united by a few vertically placed mattress sutures and the edge by a continuous catgut suture, the mattress sutures being placed vertically and not horizontally so as not to interfere with the transversely disposed blood-supply to the flap margins. By this device the lateral paradontal incision and separation of palatal muco-periosteum with its involved danger to the blood-supply, not to mention trauma, can be avoided; but for those surgeons who prefer to combine this, the muco-periosteum may be raised through a small puncture near the teeth. So much for the hard palate.

With regard to the soft palate, at the present time a very necessary but most defective step in these operations is the inevitable section of the tensor, and even levator, palati as well as the separation of the nasal portion of the soft from the hard palate, these two factors probably accounting for some or most of the common after-trouble with phonation. I have endeavoured to overcome this cardinal defect in the case of the soft palate in the same way as the hard, but whether as successfully it is at present rather too early to state owing to small experience of these operations. To this end the tip of the soft palate is drawn forward on to the hard, and a longitudinal incision is made on its naso-pharyngeal surface through half its thickness this incision follows the same line as the intranasal section for the hard palate. The flap so marked out is raised, turned into the cleft and down into the mouth, so that later what was part of the upper surface will face the tongue. The two palatal incisions are then united at the posterior edge of the hard palate by curved scissors, thereby giving one long incision and flap from the upper aspect of hard and soft palates from end to end of the fissure.

By this operation I think it can be claimed that the palatal blood-supply is not impaired as is the case with the lateral section method; that important phonatory muscles are scarcely interfered with; that tension is obviated; and that apposing surfaces, more promising of union than edges, are obtained. And although the involved surfaces may be only half the thickness of the ordinary ones, yet this is more than compensated for by the fact that the arteries of supply are all intact, no tension prevails, and the gross trauma to the parts from the ordinary operation is avoided, all of which advantages favour union.

The diagrammatic illustration renders clear the method (A). Should the septum reach the palate the flap on that side is obtained therefrom. B shows the graduated knives and raspatory in profile, with screw disc on the latter for varying and maintaining the distance from the blade so as to render it adaptable for any width of flap. C indicates the knife and raspatory required for the septum, whilst D is the universal handle. The shape and size of the blade of knives and raspatories are also indicated, the knife having a cutting edge all round. The shafts are about 3 inches long, the handle 6 inches.



I would commend this nasal-flap operation to surgeons, particularly in the case of the hard palate which gives the chief trouble. The operation, if desired, can be performed in two stages.

Diphtheria at Larbert.—A serious outbreak of diphtheria has occurred at Larbert, Stirlingshire, and the central school has been closed.

COMPLETE HEART-BLOCK WITH HIGHER VENTRICULAR THAN AURICULAR RATE.

By EDGAR LEA, M.D. Vict., M.R.C.P. Lond.,
HONORARY PHYSICIAN, ANCOATS HOSPITAL, MANCHESTER.

A case of complete heart-block is here reported which presented the following unusual features: 1. An abnormally high and persistent idioventricular rate of 50 to 60 beats per minute, with occasional irregularity of rhythm not wholly due to premature ventricular contractions. 2. A period of sinal bradycardia of frequency 51, during which time the ventricular rate exceeded this. 3. Auricular tachycardia of frequency 200 per minute following the injection of 1/50 gr. atropine sulphate. 4. An unusual relationship between the auricular and ventricular beats during an apparent 3–1 block.

Clinical Description.

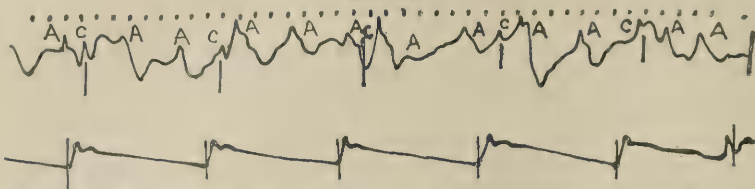
The patient, a man aged 38, was admitted into hospital under my care on Sept. 24th, 1913, having suffered recently from fits and dyspnœa. The family history was good. He was a married man with children. As to past history and habits, he had always had good health; no serious illness. He was a total abstainer and a non-smoker. His work had been healthy but laborious. No rheumatism; syphilis denied.

Present illness.—He was quite well up to a month before admission. When going for a walk one afternoon he suddenly lost consciousness and fell down. He regained consciousness, so his friend who was with him told him, in about a minute, and walked home. Another fit occurred at 11.30 that night and another at 4 o'clock the following morning. The next day he had four more fits on his road home from work, falling in the road each time. His doctor saw him that day. For the next three weeks he remained at home. During this time he states that he had three or four fits daily. Since Sept. 21st the attacks had been slighter in severity.

Condition on admission (Sept. 24th).—The patient was a well-built man of more than average height. His complexion was sallow and he looked rather ill. He said that since June he had lost weight, "pounds and pounds." There was considerable œdema of the legs, and the abdomen was a little swollen and felt tight. On examination the pulse was slow, regular, and of good tension; frequency 35·5 per minute. There was fairly well-marked venous pulsation in the neck. Heart: No apex beat was visible; no thrill. The deep limits of cardiac dulness were as follows: right limit, 1¼ inches; left limit, 5 inches from mid-sternal line; upper limit, third rib. On auscultation there was heard at the apex and at the lower end of the sternum a well-defined but not loud systolic murmur which replaced the first sound. The second sound was normal at all areas. At the base of the heart the sounds were less definite, but the impression was conveyed of intermediate, slighter sounds, probably of auricular origin, occurring between the ventricular contractions. The lungs were normal. Nervous system normal. The patient was intelligent and of a sanguine temperament. The liver was slightly enlarged and rather tender. A trace of albumin in the urine. Blood pressure: arm, 130 mm.Hg; leg, 122 mm.Hg. At a later date Dr. W. J. S. Bythell's X ray report showed evidence of much enlargement and dilatation of the whole heart. The separate movements of auricles and ventricles could not be satisfactorily demonstrated.

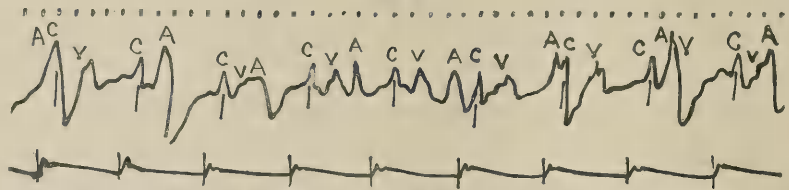
Progress and treatment.—On Sept. 25th the patient had a "fit" at 4 A.M. The nurse on duty stated that the pulse was absent during the fit (she had been warned to expect this feature); immediately afterwards the pulse rate was at 100. On Sept. 27th a second slight fit, not associated with loss of consciousness, occurred. The pulse was not stated to be stopped. This was the last fit which the patient had during his stay in hospital to Nov. 11th, 1913. On Sept. 29th potassium iodide, gr. 10 thrice daily, was prescribed, and this was continued till his discharge. During his stay in hospital his general condition improved. The œdema and the albuminuria quickly cleared up. There remained, however, throughout his stay, and subsequently, dyspnœa on exertion; and there occurred, following the first allowing of the patient up, a slight return of the œdema in the legs. This again subsided with rest. From Oct. 24th to Nov. 4th tincture of digitalis, ♏ 5 t.d.s., was given. This did not appear to have any influence upon the ventricular rhythm or upon the degree of block, which, as will be seen, remained complete throughout.

FIG. 1.



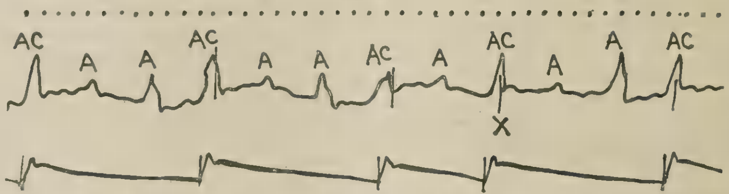
Tracing, Sept. 24th. Complete heart-block. Auricles 84 per minute; ventricles 35·2.

FIG. 2.



Tracing, Sept. 29th. Ventricular acceleration to 59; auricular slowing to 51 per minute.

FIG. 3.



Tracing, Oct. 2nd. Ventricular rate 30; auricular 90. Complete block still present. Note that at × there occurs a ventricular beat which is premature, but which coincides with a second auricular contraction. The auricular beat which precedes the synchronous A. and V. beat is larger than that which succeeds same. Though in this strip of tracing the auricle and ventricle seem throughout to fall together, this was not so when seen over longer periods.

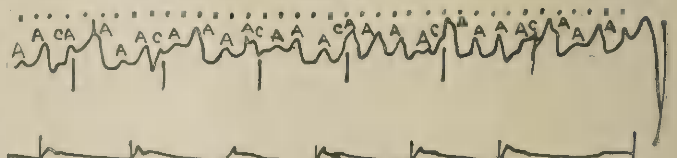
Polygraphic curves.—Complete heart-block was present throughout. On admission (Sept. 24th) the auricular rate was 84 and the ventricular 35·2 per minute. (Fig. 1.) Both rhythms were regular. Five days after admission, during which time the patient was not taking any drugs, the curve shown in Fig. 2 was gained. It shows that the ventricular rate had accelerated to 59 per minute, whilst the auricular rate had slowed to 51. Both rhythms continued regular. That the slow auricular rate was due to vagal influences was suggested by the fact that it was accelerated to 88 per minute after the hypodermic injection of atropine 1/60 gr. (20 minutes). This drug, however, neither on this occasion nor on any subsequent occasion had the slightest demonstrable effect in lessening the degree of A.-V. block. Whilst the atropine thus caused an auricular acceleration of 72·5 per cent., there was an associated ventricular decreased rate, a decrease of 15·7 per cent., for now the ventricular rate came down to 51 per minute. Three days afterwards (Oct. 1st) the auricular rate was at 96, the ventricular 34. The next day (Oct. 2nd) there appeared to be an exact 3–1 ratio: auricles 90, ventricles 30. Complete block, however, was still present. There was also a slight degree of ventricular arrhythmia present, although the auricular rhythm remained regular. Nor was such ventricular arrhythmia due merely to premature beats, a common finding, for it can be seen that the shortened ventricular cycles are due in nearly but not all instances to the ventricular contraction falling synchronously with an auricular contraction. (Fig. 3.) This event will be subsequently referred to. It may also be noted that the auricular beat which immediately succeeds such a synchronous contraction is smaller than that which precedes it, showing, presumably, a more forcible emptying of the auricle with the synchronous contractions. From about Oct. 10th the ventricle seemed to "settle down," as it were, to the rhythm which it maintained with but little variation during the rest of the patient's stay in hospital. Its frequency remained from 55 to 60 per minute. The auricular rate, too, maintained an average frequency of 88 per minute. The effect of vagus pressure in the neck was tried on Oct. 10th. No result followed right vagal pressure, but left vagal stimulation slowed the ventricular rate from 54 to 33 per minute. After this observation had been made 1/50 gr. atropine was injected. In 20 minutes it was found to have induced an unusually rapid auricular rate of 200 per minute. (Fig. 4.) The ventricle was not affected. No subjective symptoms were associated at any time with the vagaries of auricular and ventricular activities.

Some weeks after patient's discharge from hospital his doctor rang me up to say that the man had died suddenly whilst lifting some forms at a public institution, and he was good enough to forward to me the heart. The organ was large and of normal shape. There was a little atheroma around the aortic valvular orifice. In the interventricular septum, however, there was a dense, hard, yellowish thickening. This reached its maximal extent in the upper part, just in the region which the A.-V. bundle traversed. The nature was almost certainly syphilitic. The other valves and the myocardium were apparently healthy.

Remarks.

(*a*) *The ventricular rhythm.*—Mackenzie[9] states "there are now on record a number of cases in which the ventricular rate [in complete block] has been as high as 60." It is true that there have been several instances in which the idioventricular frequency has been stated to have been markedly accelerated for a brief period following a fit. In the case here recorded this fact was noted. And similar quickening of temporary character has been recorded by Hay and Moore,[7] Carrion,[1] probably Hoffmann,[8] also Earnshaw[12] and Laubry.[13] Two similar cases have been recorded by Dr. Byrom Bramwell in the *Edinburgh Medical Journal*, March, 1915. But in these instances such quickening has been associated with arrhythmia, and has often been due to frequently recurring ventricular extrasystoles. Again, experimental instances of increased idioventricular rate have been plentiful. Thus, Erlanger's and Blackman's experiments[4] showed that during complete block there occurred paroxysms of ventricular tachycardia at frequency 141, and in one instance even at 210 per minute. Lesser degrees of acceleration were noted by them following exercise, sympathetic stimulation,

FIG. 4.



Tracing, Oct. 10th. Twenty minutes after injection of atropine, 1/50 gr. Auricular rate 200 per minute; ventricular 53. Both rhythms regular.

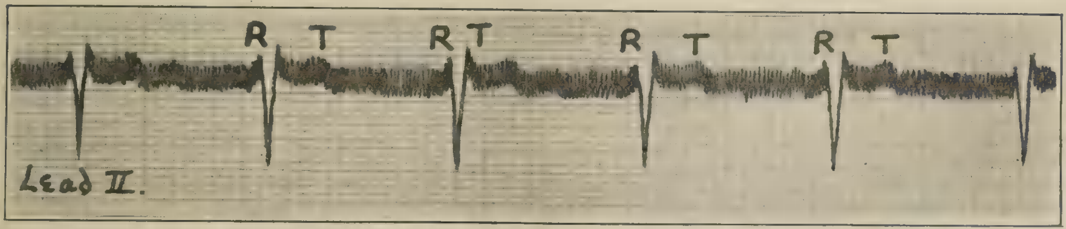
and phasic variations related to Cheyne-Stokes respiration. Cullen and Tribe[3] found in the cat inconstant acceleration following accelerator stimulation. Increased ventricular rate has followed digitalis (v. Tabora,[11] Erlanger,[5] Hare[6]). When, however, we come to clinical instances, and if we confine attention to those cases where the acceleration is due to causes other than occasional and irresponsible extrasystoles, the number of instances is at present limited. A careful perusal of the literature has resulted in the following list of cases:—

Name.	Ventricle, rate and rhythm.	Remarks.
1. K. F. Wenckebach.	54, regular.	Block itself due to digitalis.
2. J. D. Windle.	66, ,,	No digitalis.
3. J. Mackenzie.	70, ,,	Block itself due to digitalis.
4. Meyer.	54, slightly irregular.	,, ,, ,, ,,
5. ,,	54, regular.	,, ,, ,, ,,
6. Neuhof.	54, slightly irregular.	No digitalis.
7. T. Lewis.	90, regular.	Complete block due to digitalis; auricles fibrillating.
8. E. H. Hunt.	64, ,,	No digitalis.
9. Hewlett and Barringer.	108, regular, but only brief phases.	Strophanthus poisoning. Auricular rate only 96. Shortly before death.
10. C. E. Lea.	60, regular.	Organic block. No digitalis.
11. ,,	75, regular.	Block due to digitalis; auricles fibrillating. (Fig. 5.)

References.—1. Engelmann's Archiv. Suppl., 1906, p. 58. 2. Heart, 1910, vol. ii., p. 2. 3. Brit. Med. Jour., 1911, vol. ii., p. 872. 4. Deutches Archiv für Klinische Medizin, 1911, p. 16. 5. Ibid. 6. American Journal of Medical Sciences, 1911, p. 515. 7. Heart, 1912, vol. iii., p. 279. 8. THE LANCET, May 2nd, 1913. 9. Archives of Internal Medicine, February, 1910, p. 93. 10 and 11. THE LANCET (present cases).

It will be clear from this list that the large majority of instances of high idioventricular rate are due to digitalis. That this drug can also influence the ventricular rhythm in other ways than simple acceleration has been shown in a few cases recently published,[2,8,10] in which, though the rate was not affected, the rhythm and the form of the ventricular complexes were modified. Such facts bring into relief the unusual feature in the case here reported, in which no drug influence was present.

FIG. 5.



Complete heart-block with auricular fibrillation (from the Electrocardiographic Department, Ancoats Hospital). Ventricular rhythm is regular at rate 75 per minute. Patient, a man aged 78, on full doses of digitalis.

(*b*) *The auricular rate.*—The slowing of the auricle over the brief period noted was due to sinal bradycardia. There was no sino-auricular block, as the rhythm was quite regular, and atropine caused acceleration without any modification of the rhythm. I have only been able to find two other clinical cases where, in complete block, the ventricular rate exceeded the auricular. One was Meyer's case, where digitalis had induced a 3–1 sino-auricular block, causing an auricular frequency of 18 per minute. Case 9 in above list is the second instance. The marked auricular acceleration to 200 following atropine represents, I think, the maximum effect from this drug so far recorded. These two observations suggest a high degree of vagal tone over the auricles, and possibly such tone may have been exerted upon the ventricle in this case, for it is unusual for vagal pressure in the neck to affect the ventricular rate, when there is complete block, whereas left vagal pressure here showed the ventricular rate 38 per cent.

(*c*) *Synchronous A.-V. contractions.*—Reference has been made to the tracing (Fig. 3) in which an apparent 3–1 A.-V. rhythm was due, in reality, to each ventricular contraction falling synchronously with each third auricular beat. That this was not merely an accidental relationship is shown by the fact that on more than one occasion a ventricular contraction fell exactly with a second auricular beat (as at ×, Fig. 3). Whilst this event was often noted on this day, other parts of the tracings showed an occasional typical ventricular extrasystole, and in such instances there was no relationship between such premature beat and the auricular contractions. The time interval separating the premature beat from the preceding normal contraction was exactly a second; the interval where the ventricular beat fell with the second auricular contraction was 1·2 seconds. It is, of course, possible to explain the synchronous A. and V. contractions on the basis that the ventricular contraction was also here a premature beat which happened to fall with the auricular beat, but the increased time interval which separates it from its preceding normal beat as compared to the instances of undoubted extrasystole makes one hesitate to accept this fully. As it happens, too, there is an apparent precedent for this observation in a case reported by Herrick.[14] In his case there was an exact 5–2 A.-V. ratio; ventricles 33·6, auricles 84. Here each second ventricular contraction coincided with the auricular beat. One is content here simply to place this observation on record without offering any explanation of its possible cause.

Conclusions.—1. A clinical case of complete heart-block, of organic nature, is recorded which showed: (*a*) persistent high idioventricular rate of 60; (*b*) a period of sinal slowing to 51, during which time the auricular rate exceeded the ventricular; (*c*) an unusual auricular tachycardia, following atropine, to 200 per minute; and (*d*) synchronous auricular and ventricular contractions during an apparent 3–1 block, such synchronism being maintained even when some degree of ventricular arrhythmia was present. 2. Digitalis seemed to have no effect upon the rhythm or rate. 3. Consideration of the hitherto reported cases of high idioventricular rate, relatively few in number, shows that the great preponderance of such instances are due to digitalis, whether or not the auricles are acting normally. Even where the rate is unaffected digitalis may influence the type of ventricular complex.

References (other than those in Table).—1. Carrion, P.: Revista Clinica de Madrid, September, 1910. 2. Cohn, A. E.: Heart, 1913, vol. v., p. 13. 3. Cullen and Tribe: Journal of Physiology, 1913, vol. xlvi., p. 141. 4. Erlanger, J., and Blackman, J. R.: Heart, 1910, vol. i., p. 177. 5. Erlanger, J.: Archiv für die Gesamte Physiologie, 1909, vol. cxxvii., p. 77. 6. Hare, H. A.: Journal of American Medical Association, 1912, vol. lviii., p. 1973. 7. Hay, J., and Moore, S. A.: THE LANCET, vol. ii., 1906, p. 1271. 8. Hoffmann: Deutsches Archiv für Klinische Medizin, 1910, p. 172. 9. Mackenzie, J.: Diseases of the Heart, Oxford, 1913. 10. Oppenheim, B. S., and Williams, H. B.: Proceedings of Society of Experimental Biology and Medicine, 1913, vol. x., pp. 86-7. 11. v. Tabora: Zeitschrift für Experimentelle Pathologie und Therapie, 1906, vol. iii., p. 499. 12. Earnshaw, H. C.: American Journal of Medical Sciences, 1910, vol. cxxxix., p. 503. 13. Laubry, Esmein, et Foy: Société Médicale des Hôpitaux, Dec. 17th, 1909. 14. Herrick, W. W.: American Journal of Medical Sciences, 1910, vol. cxxxix.

Manchester.

A CASE OF WAR WOUND INFECTION BY AN ANTHRACOID BACILLUS,

THE WOUND BEING CAUSED BY A SHATTERED TRIGGER-GUARD.

BY A. W. SHEEN, M.S. LOND., F.R.C.S. ENG.,
LIEUTENANT-COLONEL, ROYAL ARMY MEDICAL CORPS (T.F.).
With Pathological Report by Temporary Lieutenant B. G. KLEIN, R.A.M.C.

THAT the routine examination of the germ infections of gunshot wounds may sometimes yield unusual results is shown by the following case. It was thought at first that the infection was by the anthrax bacillus, but more detailed investigation showed that the organism was of the variety known as anthracoid. The mode of infliction of the wound—by a shattered trigger-guard—is also of interest.

Private A. G——, aged 24 years, was wounded by a bullet on Dec. 15th, 1914, at 8.15 A.M., in the palm of the left hand and in the right index finger. He estimates the range at about 30 yards. When wounded he was advancing across a turnip field with a clay soil and was holding his rifle, prepared to fire. Both hands were wounded at the same time. He dropped the rifle at once and does not know to what extent, if any, it was damaged. Because of heavy fire he lay out after being shot for about ten hours and then crawled back to his trench, getting the wounds all smeared with soil. The first field dressing was applied, and he proceeded to the base, his wounds being cleaned and dressed (apparently painted with tincture of iodine) several times. He was admitted to hospital on the afternoon of Dec. 17th.

On admission his right index finger presented an extraordinary appearance, well shown in the photograph (Fig. 1) taken four days later. The finger was stiff, nearly extended, and very much swollen round its centre, with over the dorsal surface of its middle part a protuberant ulcer, the base of which was partly covered by an adherent black slough, and partly glazed pink, with adherent fragments of grey slough and of lymph. The swelling was hard and not tender. When the photograph was taken most of the black slough had come off. Proximal to the ulcer was a "gutter" wound in the line of the finger as if the bullet had passed there. On the back of the hand were a number of linear black scabs of varying lengths suggesting small superficial wounds. The whole hand was slightly swollen. Above the wrist the limb was normal. There were the entrance and exit wounds of a bullet through the palm of the left hand. The temperature was normal and continued so, and there was no constitutional disturbance throughout.

The X ray appearances are shown by the photograph (Fig. 2). The proximal phalanx is fractured. It seems as if the bullet, after passing through the palm of the left hand, hit the trigger-guard and pulverised it, the tiny fragments being carried into the right index finger behind the trigger-guard.

FIG. 1.

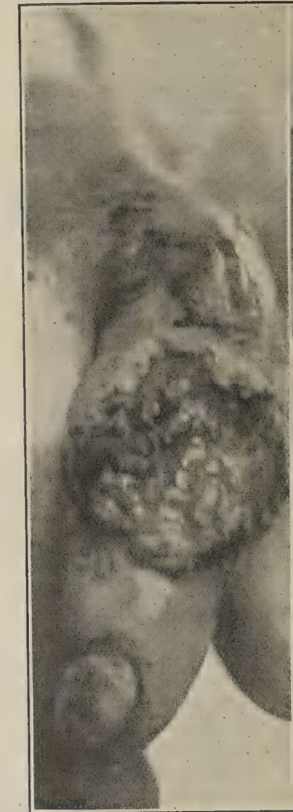
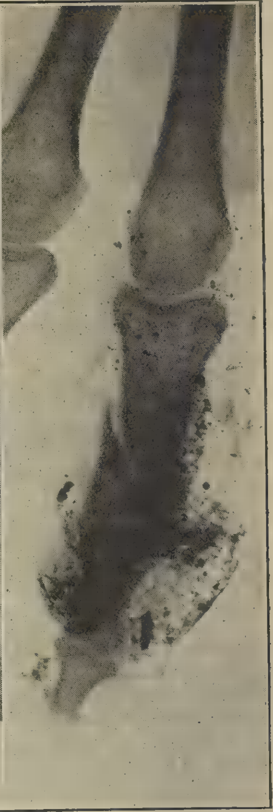


FIG. 2.



Under boric fomentations and hot iodine baths the swelling subsided, healing took place rapidly, and the use of the finger was to a large extent restored. A sinus on the dorsal surface, where the ulcer was, persisted, and this was scraped by Lieutenant J. S. Rowlands on March 29th, and subsequently healed, the man leaving the hospital on April 20th. The left hand gave no trouble; cultivations from it showed the usual pyogenic organisms.

Pathological Report by Lieutenant KLEIN.

Dec. 19th, 1914: Scrapings examined from the necrotic area on the back of the forefinger of the right hand. (*a*) Smears direct from the material showed, in addition to a very large number of streptococci, some thick straight bacilli, staining by Gram. These occurred separately, in pairs, and in short chains. The ends were nearly square. The length varied, being greatest in the single forms, in which it measured more than the diameter of a blood disc. The thickness of the rods varied from one-third to one-quarter of the length. No sporing forms were seen. (*b*) Cultures. Anaerobic culture in milk yielded no result (heated to 80° C. for 15 minutes after inoculation). Aerobic culture at 37° C. in 24 hours showed, in addition to streptococci and B. coli, a few opaque white colonies, partially confluent, of irregular outline and granular appearance. The edge of such a colony, and of similar colonies in subculture, showed an arrangement similar to that of the anthrax colony.

Microscopical examination showed cylindrical rods, with sharply defined ends (not, perhaps, quite so square cut as the typical anthrax bacillus), Gram-positive, and spore-bearing, the spore being central or nearly central. The bacilli were arranged in long chains. In the agar culture most of the bacilli appeared to be non-motile, but a certain number showed movement. In bouillon at 37° C. an abundant growth occurred in 24 hours. A certain amount of filmy growth was present in the supernatant fluid, but the bulk of the resulting mass fell and formed thick white flocculi at the bottom. The bacilli occurred here also in chains. In the 24 hours' culture they were distinctly motile.

Gelatine surface culture at 20° C. showed pin-point colonies in 24 hours; liquefaction in three days. Gelatine stab culture at 20° C. (using 7½ per cent. gelatine) produced a typical spiking growth similar to that of the anthrax bacillus. The surface growth on blood serum was similar to the stroke culture on agar, the edge of the growth showing the same furry appearance. No liquefaction of the medium occurred.

Dr. F. W. Andrewes, of St. Bartholomew's Hospital, kindly examined a culture of this bacillus and inoculated a mouse with it. He reported that the bacillus was motile and therefore could not be the anthrax bacillus. The mouse inoculated with 1 c.c. of a 24 hours' broth culture under the skin of the back died in 24 hours. In the dead mouse the chief difference from anthrax was that the intestines were distended with turbid fluid, while the spleen was enlarged and dark, and a film from it showed fairly numerous bacilli like anthrax, but the majority of them were quite actively motile.

The bacillus above described, therefore, although resembling the anthrax bacillus in some particulars, is not identical with it. It belongs, in all probability, to a class of organisms which have been described and termed "anthracoid"; one at least has been found which has some degree of virulence. Bainbridge has described such an organism as B. anthracoides. Dr. Andrewes has cultivated such a bacillus from horsehair.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

STOMACH *V.* HEART IN RELATION TO PRÆCORDIAL PAIN AND SUDDEN DEATH.

BY C. J. SORTAIN HANCOCK, M.D. DURH., M.R.C.S., &c.

IN connexion with the letters which have recently appeared in your columns on the above subject, the following case may be of interest.

A man, aged 60 years and looking much younger, recently sought advice for attacks of angina. The nature of the attacks is as follows. After any severe exertion, such as walking up hill, or if any ordinary walk is taken directly after food, severe pain commences in the upper part of the thorax, spreading to the neck, shoulders, and down both arms; it rapidly increases until it is impossible for him to move. The moment, however, he stops still the pain quickly begins to pass away, the duration of it being only from 30 to 60 seconds. If he starts walking again directly the pain returns, but after a short time he is able to walk slowly without pain. If the stomach is empty he can do ordinary walking as well as any man of his age. These attacks have occurred for the last two years with the same characteristics.

The previous history of his case which has a direct bearing on it dates from 1880, when, living in India, he suffered frequently from intermittent fever and also had severe attacks of acute gastritis, which continued in spite of treatment until he took change of air on the Brahmapootra. Then all the stomach symptoms disappeared in 24 hours, and he was able to resume his ordinary diet. He led an open-air life, and was in the saddle practically all day long. He spent in all 25 years on the plains of India, with only two holidays of ten months each. In 1885 he had broncho-pneumonia which laid him up for nearly three months and left him with a damaged lung and severe daily attacks of asthma. After these had lasted for 2½ years the paroxysms, in the middle of a hot rainy season began gradually to subside, and in a few weeks ceased, and he has never had any since.

The anginal pains came on two years ago, as above described, and do not appear to have varied in character. He has always been a total abstainer from spirits and has never had syphilis. The gastric symptoms also recurred, and he is now liable to periodic attacks of acute dyspepsia, any food at first causing severe pain, but this phase passes off and the hunger syndrome ensues. In addition to this he has occasional slight glycosuria. The heart on physical and X ray examination presents no abnormal signs whatever, and the aorta appears normal. The arteries show no signs of sclerosis. Blood pressure: 124 systolic; 80 diastolic.

For this case it would appear that if the hyper-sensitive segmentary centres are in any way responsible for the attacks they must occupy a secondary, not a primary place—for no surface pains or points of tenderness on the chest wall are complained of during the attacks, and no relief is afforded by eructation of gas, although the attacks seem to be in the large majority of instances secondary to gastric disturbance. At the same time it must be remembered that the lung trouble he complained of in 1885 resulted in frequent attacks of asthma which persisted over a space of 2½ years and then suddenly left and have never returned. I would therefore suggest that if the angina is in any way connected with the "spinal segments" the connexion is of a reflex rather than of a direct character.

Leytonstone, N.E.

POISONING BY "SPIRITS OF SALTS."

BY H. FAIRFAX, L.M.S.S.A. LOND.

I REPORT this case, although it occurred in my practice nearly five years ago, because circumstances have made it topical.

On the morning of August 31st, 1910, I was called to see a patient, and was told by his wife that he had taken about two ounces of spirits of salts. I found that he had swallowed nearly two ounces of "partially killed spirits of salts" with suicidal intent. The whole of the inside of the mouth and throat as far as one could see was corroded and discoloured by the action of the acid. I administered bicarbonate of soda in milk and water and ordered the patient to take as much milk and water, with a pinch of the powder in it, as often as he could be induced to take it. Sickness and diarrhœa continued the whole day. On the next day I gave a mixture of tr. chlorof. et morph. and liq. bismuthi to quiet the stomach and stop the diarrhœa, raw eggs and milk being the food ordered. The patient's condition improved considerably.

On Sept. 7th I removed with the forceps a traumatic diphtheritic membrane from the uvula and palate, which was considerably interfering with the breathing. Had I not known the history of the case and only seen the patient for the first time on this occasion I should have had no hesitation in stating that it was a very bad case of diphtheria. I took some of the membrane to Dr. John Biernacki, the medical superintendent of the Plaistow Fever Hospital, who said it looked like an ordinary case of diphtheria until I gave him the history of the case. He kindly had the specimen examined for me with negative results. An ordinary gargle of biborate of soda removed the false membrane and the mouth was quite clear and in its normal condition by the tenth day. The patient was decidedly better, but was complaining of intense pain all over the region of the stomach, with a sensation of choking and suffocation. The temperature and pulse were normal. Four days later (Sept. 11th) he felt sick and said he had a lump coming up in his throat, and he thrust his fingers as far down as he could to bring it up. What he brought up frightened him. This vomit appeared to me from its shape to be a complete cast of the whole of the œsophagus and stomach. After floating it out in water and examining it, I told his wife to save it and place it in a small glass jar. She unfortunately let the basin fall on the floor and smashed it, but gathered it up as well as she could, and I have placed it in spirit. On the next day vomiting again set in, the vomit being mixed with bright arterial blood. Iced milk, sugar dissolved in cold water, and minim doses of dilute liq. ferri perchlor. were given three or four times daily. The patient had very little sickness subsequently, and seemed to be in a fair way toward recovery. His diet was restricted to milk and oatmeal flour, with other like soft and pulpy foods.

On Oct. 5th the patient walked to the surgery for the first time since taking the acid, and stated that he was feeling quite himself again, and that he hoped shortly to resume his ordinary work. He asked if he might have a little more substantial food. I gave him permission and told him to be very restricted in his diet. On the 7th he called again, stating that he had had a relapse and was vomiting everything he took in the shape of food. He also informed me that he had taken a mutton chop, greens, and potatoes. I examined the urine; its specific gravity was 1035 and it was acid in reaction, no sugar or albumin being present. The heart sounds were normal and the pulse-rate was 84 and regular in force and rhythm. There was hyperresonance over the upper part of the left lung.

The patient expressed a desire to go to a hospital and see if anything further could be done for him. He was admitted to Charing Cross Hospital, an operation was performed on Nov. 2nd, and he unfortunately died from shock.

Plaistow, E.

A NOTE ON PLAGUE BACILLI IN AN UNUSUAL SITUATION IN THE BODY.

BY J. H. SHELDON, M.B. LOND., &C.,
DISTRICT MEDICAL OFFICER, BURMA RAILWAYS, INSEIN, BURMA.

AT 8.30 A.M. on Nov. 29th, 1913, I received information that an adult Burman male was in a dying condition, after an illness of 36 hours only, and that during the past hour convulsions and head retraction had been present. The sub-assistant surgeon was sent to see the man, and instructed to obtain slides of the cerebro-spinal fluid in addition to those of the blood, as it seemed possible that the case might be one of epidemic cerebro-spinal meningitis. He arrived at 9 A.M. to find the patient dead. A superficial examination of the body failed to discover any bubo or other gross lesion.

Specimens of peripheral blood were stained with gentian-violet and of the cerebro-spinal fluid with carbol-fuchsin, and examination of the slides revealed the presence of typical plague bacilli in small numbers; the slides of the cerebro-spinal fluid simply swarmed with them.

I have to thank the chief medical officer of the Burma Railways for his permission to publish the case.

Insein, Burma.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OPHTHALMOLOGY.

Exhibition of Cases.—Retinitis of Pregnancy.

A MEETING of this section was held on June 9th, Mr. PRIESTLEY SMITH, the President, being in the chair.

The following cases were shown:—

Mr. A. C. HUDSON: A case of Sympathetic Ophthalmitis treated by salvarsan and neosalvarsan. It was regarded as an undoubted case of the condition, and seemed a genuine cure.

Mr. J. S. HOSFORD: Two cases of the Albuminuric Retinitis of Pregnancy.

Mr. C. N. ATLEE: Coloboma of the Iris in mother and child.

Mr. CHARLES WRAY: Bony Growth in the Frontal Sinus. In cases of retrobulbar neuritis suspected to be of sphenoidal origin, he advocated making the patient spend some time with the face downwards, with a view to facilitating drainage from the sphenoidal and posterior ethmoidal cells.—Mr. W. T. HOLMES SPICER discussed the case.

Mr. J. HERBERT FISHER read a paper on Retinitis of Pregnancy. He had not included in the title the term "albuminuric," as he wished to lead his hearers away from the idea that the acute retinal changes were the results of the kidney disorder. Obstetricians now no longer explained the albuminuria of pregnancy as the result of obscure reflex effects of the gravid uterus upon the kidneys, or by mechanical pressure on the ureters. They attributed it, with eclampsia and pathological vomiting of pregnancy, to toxæmic products in the circulation. Eclampsia could not be predicated by any examination of the urine; the effects were especially seen in the quality of the blood and in the blood-vessel walls. In fatal cases of eclampsia, hæmorrhages of brain and necrotic changes in the liver were often found, and albuminuria was an effect of the disease on the kidney, not the cause. In the retinitis of pregnancy the condition of retina was different from that in albuminuric retinitis, as also was its sequel. Syncytiotoxins—products of the disintegration of the syncytium cells—had been found in these cases, and these cells immediately connected the fœtal with the maternal structures. Mr. Fisher proceeded to give particulars of a series of typical cases of the condition which had been under his care. In one fatal case Mr. A. C. Hudson made a pathological examination on the day after death, and found the coats of the eye *in situ*. There was some œdema of the nerve head, and in the nasal quadrant of the retina were two large hæmorrhages. The microscope showed the sclera and nerve sheaths to be normal, the chief pathological changes being in the large choroidal arteries, many of which showed gross endarteritis, causing in some instances obliteration of the vessel lumen. Some of the choroidal arteries were normal. Similar pathological changes were found in sections of posterior ciliary arteries surrounding the optic nerve behind the eyeball. Bruch's membrane was everywhere intact and the retinal pigment normal. The retina and optic nerve head showed evidence of œdema, in the former almost limited to the internuclear layer. Rods and cones were almost entirely absent, but this may be attributable to post-mortem changes. In the large retinal veins there was pronounced thickening of the adventitial coat. He had found it difficult to group his cases. The rule had been for good recovery of vision to ensue, with the disappearance of all acute manifestations in the retina, thus differing absolutely from cases of ordinary renal retinitis. In cases in which defects of vision were permanent, this seemed to have been because changes had been produced in the walls of the arteries or an atrophic condition of the nerve. A recurrence of the retinitis was not necessarily seen when subsequent pregnancies occurred, even though the albumin did not quite disappear in all. One of his patients died after an interval of six years from cardiac failure; another after eight and a half years from cerebral hæmorrhage into the left corpus striatum. In this case the kidneys were found to be of the typical red granular type. It seemed clear from his cases that albuminuria of pregnancy was not sufficient alone to set up the typical retinitis of pregnancy.—In the ensuing discussion Mr. HOSFORD, speaking of retinitis, reported having carefully observed 16 cases during the last 15 years; only three of those patients were now alive. All but two ultimately developed a star-shaped spot on the macula, a sign which he regarded as of fatal omen. Many patients seemed quite to recover from the initial attack; a relapse occurred later. In a series of 132 cases in Dr. S. Fenwick's wards 81 were in females, 51 in males; the onset among single men and single women seemed to be about equal. Much of the renal trouble seen fairly late in life might have started, in females, in pregnancy. Only 3 of the 132 cases had myopic eyes. Since the Wassermann reaction was introduced he had had all the cases he saw tested, but none was syphilitic.—Mr. W. C. ROCKLIFFE related a case in which retinitis occurred in the first pregnancy, but the defect of sight seemed to be quite recovered from after premature labour was induced. A subsequent pregnancy brought on a repetition, but though labour was again ended prematurely, sight became progressively worse and ended in blindness. The patient died four years later from heart failure.—Mr. J. B. LAWFORD alluded to the far-reaching effect of the toxæmia. In some of his cases, although there was no recrudescence of retinal change during subsequent pregnancies, toxic effects showed themselves at a later date and eventuated fatally. It was a common belief that one of the safeguards in this condition was the avoidance of further pregnancies in the patient. In one case which he had under care over 20 years ago the lady developed retinitis in her first pregnancy, and had great defect of sight. This disappeared after delivery, and, acting on the advice of her medical attendant and himself, she had no further pregnancies. Her sight remained good for a number of years, but ultimately she developed advanced changes in the retinal vessels, and succumbed to chronic nephritis. Another patient, older, developed the condition in her third pregnancy, and recovered. The advice to bear no more children was disregarded, and in her next pregnancy there was a great aggravation of her toxæmic condition, and she died from nephritis. He asked whether obstetricians were aware of the reason for the persistence of the toxic effects of the first attack, even though some subsequent pregnancies did not seem to be accompanied by the symptoms. There seemed to be need for a revision of the view as to the comparative innocuousness of the retinitis of pregnancy.—Mr. LESLIE PATON regarded the paper as important in that it gave a broad view of a disease not apparently due to a microbial poison, but to a cytotoxin; and he tentatively suggested that such conditions as the irido-cyclitis seen in women at the period of the climacteric would possibly be brought into the same category. The seriousness of the disease seemed to be directly proportional to the extent to which the vessels were injured at the time of the attack. One case, though presenting "silver-wire" arteries, remained still well eight years after the attack. He was much interested in the statement of Mr. Fisher that subsequent pregnancies need not necessarily cause a recurrence of the retinitis, for it touched a matter on which advice was frequently asked.—Mr. FISHER replied, suggesting combined investigation by obstetricians and ophthalmologists concerning the diseases attributable to the toxæmia present in pregnancy.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Exhibition of Cases.—Bridge Method of Skin Grafting.

A MEETING of this section was held on May 14th, Dr. F. CONWAY DWYER, the President, being in the chair.

Mr. D. KENNEDY showed a girl who, some nine or ten months ago, injured her elbow by a fall. Since then there was complete ankylosis. When first seen about a month ago, X ray examination showed that the humerus was not normal, but somewhat battered. It was decided to perform an arthroplasty or whatever treatment was suggested by the condition found. A projection was found on the inner side of the articular end of the humerus. The projection was removed off the ulnar aspect of the humerus and the end of the humerus was put level. A flap was then taken partly from the lateral aspect of the arm, and almost entirely consisting of fat, and turned over the humerus, leaving the ulna and radius as they were.—The PRESIDENT and Mr. H. DE L. CRAWFORD discussed the case, and Mr. KENNEDY replied.

Mr. H. DE L. CRAWFORD showed photographs of four cases of Congenital Syphilis of the Hands and Feet. The skiagrams were brought forward, as congenital syphilis of the hands and feet was considered a rather rare condition. The first was in a boy, aged 11 years, with a very large swelling on the outside of the left foot and a good deal of thickening in the soft parts. The patient had well-marked Hutchinson's teeth. When the photographs were taken the condition had spread to the proximal phalanx of the big toe. The X rays pointed to the condition being gummata underneath the bone. He suggested that what appeared to be small sinuses were really pieces of dead bone. Under continued treatment with mercury and iodide of potassium the gummata healed up. The second case was that of a boy who had also well-marked Hutchinson's teeth. The patient was the only living child in the family, and there was a history of six miscarriages. The thumb was very swollen, and the phalanges showed small areas of rarefaction. There was no pain, so the condition was not looked upon as tuberculous. There was no sign of ordinary or syphilitic rickets. The third case was that of a baby, aged 1½ years. The child was an adopted one, and no definite family history was forthcoming. There was much metacarpal thickening. The child had a typical syphilitic forehead, and the absence of increased heat, tenderness, or pain made it positive that the case was not one of tuberculosis. The fourth case was that of a child with swollen ring finger on the left hand. Amputation of the finger was advised. On cutting down to the periosteum the extensor was found to be involved, and a soft, gritty substance, apparently new bone, was seen. The wound healed. A week later there was slight enlargement of the other hand. The case was considered syphilitic. Family history was bad, showing three previous miscarriages. This condition, he said, appeared to be more common than was expected, and he had decided in future not to label any of these cases as tuberculous until they had been well examined.

Mr. CRAWFORD also showed skiagrams of old Traumatic Dislocation of the Hip in a child aged 9.—The PRESIDENT said that the point raised in connexion with these cases was of much importance, as they were all likely to diagnose them as tuberculous instead of syphilitic.

Mr. CRAWFORD afterwards read a paper on the Bridge Method of Skin Grafting. After describing the technique in detail, he emphasised the following points: (1) That asepsis must be perfect; (2) that the size of the graft must be as small as possible, and that it was better to operate twice than use a very big graft; and (3) that the graft and limb must be very carefully immobilised during the first week. (The paper was illustrated by lantern slides.)—The PRESIDENT expressed the indebtedness of the section to Mr. Crawford for bringing forward this effective method of treatment. This method of grafting, which left the graft on the exposed raw surface, evidently yielded good results. He considered the technique described one that ought to be followed.—Mr. KENNEDY considered the Bridge method a most ingenious one, and if the difficulty of covering a large area could be overcome he would be glad to hear how it could be done.—Mr. M'CONNELL said he had treated one case by this method—viz., a very extensive formation of scar tissue on the thumb. The result pleased him very much, and the patient had very good abduction in the thumb afterwards. Skin grafting seemed to be absolutely different in the hand from elsewhere, as in other parts a good blood-supply was to be had, whereas the supply in the hands was bad. In all cases of grafting about the hands and feet he looked upon the Bridge method as the only one. He suggested that all methods might be used in their proper places.—Mr. CRAWFORD, replying to the remarks, said that the method which should be used entirely depended upon the site on which the graft was to grow.

SECTION OF MEDICINE.

Exhibition of a Case of Leprosy.—The Use of Vaccines in the Treatment of Respiratory Diseases.

A MEETING of this section was held on May 21st, Sir JOHN W. MOORE being in the chair.

Dr. C. M. O'BRIEN showed a patient suffering from Leprosy of the tuberculated form. The patient was a retired soldier who had offered himself for service, but was refused on account of a rash on his skin. He had served in the Leinster Regiment in Malta, Bermuda, Halifax, Jamaica, and South Africa. He had had colic in Malta and gonorrhœa in the year 1898, but had never had syphilis. He left the army in 1906 apparently perfectly well and had worked as a farm labourer. In 1913 he was in hospital for five months with boils on the face and neck. The disease was first diagnosed in August, 1914. The face as a whole was unusually broad, the chin being prominent; the skin on the forehead lumpy and shiny; the nose flattened; the lips thick; hair, other than on scalp, falling out; the hands swollen and cushion-like on back, ash-grey in colour; thenar and hypothenar muscles flat and flabby; inguinal glands shotty; reflexes normal; no anæsthesia. Mucous membranes free. No reaction with alt-tuberculin injected subcutaneously nor by von Pirquet's method. Positive Wassermann reaction. Sections from a nodule, prepared by Mr. T. T. O'Farrell, were exhibited showing the bacilli in numbers; a few in cells, the majority extra-cellular. Dr. O'Brien gave an interesting résumé of the history of leprosy, and dealt especially with recent investigations into its bacteriology and transmissibility.—Sir JOHN MOORE, Dr. H. C. DRURY (who reminded the meeting that such names as Lazarus Hill and Leopardstown, marking leprosy stations, showed the former presence of the disease in Ireland), Professor METTAM, Dr. W. M. CROFTON, and Dr. F. C. PURSER also spoke.

Dr. ROBERT J. ROWLETTE read a paper on the Use of Vaccines in the Treatment of Respiratory Diseases, which will appear in THE LANCET.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN (UNIVERSITY OF LONDON).—The Queen has announced her intention of attending the special matinée at the Palace Theatre on June 29th, at 2.30 P.M., when the proceeds will go to the London School of Medicine for Women.—The presentation of prizes will take place on Thursday next, June 24th, at 4 P.M., by Her Royal Highness Princess Alexander of Teck, when academic dress will be worn. Intending guests should communicate with the secretary, 8, Hunter-street, Brunswick-square, London, W.C. The company is asked to assemble at 3.45 P.M., after which time admittance will be only to the garden by the entrance in Handel-street.

GLASGOW CORPORATION AND THE TREATMENT OF PHTHISIS.—The Glasgow Corporation have under discussion a proposal to convert the tramway depôt at Ibrox into a temporary hospital for the treatment of tuberculosis. The scheme, which will involve an expenditure of £8000, provides for the accommodation of 240 patients, many of whom have had to be removed from other institutions taken over by the military authorities. The proposal has met with strong disapproval from the inhabitants of the district and from the Govan school authorities on the grounds that the health of the children will be jeopardised.

Reviews and Notices of Books.

The Dispensary Treatment of Pulmonary Tuberculosis.

By HILDA CLARK, M.B., B.S. Lond., late Honorary Medical Officer, Street Tuberculin Dispensary, and Tuberculosis Medical Officer to the County Borough of Portsmouth. London: Baillière, Tindall, and Cox. 1915. Pp. 279. Price 15*s*.

IN this volume Dr. Hilda Clark describes in detail a complete series of cases for whose examination and treatment she was responsible for the three years from June, 1910, to June, 1913. She explains that the investigation was carried out with three main objects in view. 1. To estimate the value of tuberculin treatment by two consecutive series of cases. 2. To estimate the position of tuberculin treatment in a scheme designed to deal with the special problem of tuberculosis in the working classes. 3. To estimate the incidence, course, and response to treatment of tuberculosis in the population of Street, a manufacturing village in Somerset, where peculiar opportunity offered for such an investigation.

It is in regard to the first two of the above propositions that the chief general interest arises. Dr. Clark has evidently expended a vast amount of time and care in the investigation of the cases and the collection of results, but owing to three main reasons, in our opinion, she fails to establish the fact that tuberculin is such a valuable therapeutic preparation as has been claimed by some observers. In the first place the classification she has adopted of the various types of cases is so involved that it is difficult to follow. Secondly, she has not contrasted her results with those obtained by other means of treatment. Thirdly, the time during which the patients were under observation was too short to enable a reliable opinion to be formed as to the permanency or otherwise of the arrest of the disease. On the other hand, however, the careful description of a large number of cases tends to show that with due care in the administration of the remedy harmful sequelæ rarely occur.

Needless to say, the best results were obtained in those cases in which tubercle bacilli were not found, and in connexion with this fact it is interesting to note the statement that the discovery of the tubercle bacillus in the sputum is considered by Dr. Clark to be the only certain proof that the lungs are infected; with this view the large majority of physicians who have had an extended experience in connexion with the disease will be cordially in accord. We also commend the opinion that the occurrence of either a general or a needle-track reaction after the subcutaneous injection of tuberculin indicates that infection of some part of the body has occurred at some period. But if a focal reaction can be detected it is considered that active mischief must be present at the spot where it was observed. These views are perfectly in accord with modern research.

In discussing the value of tuberculin as a remedial agent, Dr. Clark is not convincing. Her words cannot be considered to carry much weight when she says: "In studying the cases ...... with a view to obtaining evidence as to the action of tuberculin the first general impression must certainly be that the remedy has been of use," and the subsequent remarks by no means add force to this statement.

We do not wish to intimate that we consider that the administration of tuberculin is useless, but merely to express our opinion that the series of cases recorded in this volume have not proved that tuberculin is superior to the other methods of treatment of pulmonary tuberculosis which are now being employed.

A Text-book of Practical Therapeutics.

By HOBART AMORY HARE, M.D., B.Sc., Professor of Therapeutics, Materia Medica, and Diagnosis in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital. Fifteenth edition. London: Henry Kimpton. 1914. Pp. 998. Price 21*s.*

THE fact that 15 large editions and many reprintings have been called for since this book first appeared in 1890 leaves little room for question that the author's effort to write a trustworthy and useful text-book on therapeutics has proved successful. Dr. Hare points out that the present time is an era of therapeutic rationalism, when remedies are given, not because they are recommended or their value is proclaimed by some authority, but because their use appeals to the medical practitioner who has a knowledge of the physiological, pathological, and therapeutic problems to be faced, and therefore judges for himself what remedy is best suited to a given case. Dr. Hare has therefore studied how best to give an account of remedial measures for disease and their employment upon a rational basis.

As in previous editions the work is divided into four parts. The first deals with introductory matters, the second with the action of drugs, the third with remedial measures other than drugs, and the fourth with the treatment of individual diseases, whereby the employment of the remedies discussed in the earlier part of the book is directly applied, as at the bedside.

The book has been brought thoroughly up to date, and certain articles have been added or rewritten. In the discussion of the use of tuberculin as a remedial agent preference is given to the method of employing infinitesimal doses, so that no febrile reaction is produced. A good account is given of the therapeutics of salvarsan, and the modes of its administration are clearly described.

The book continues to be found a most useful one for reference; its vast amount of valuable information is steadily sifted and increased by recurring issues.

A Laboratory Manual and Text-book of Embryology.

By CHARLES WILLIAM PRENTISS, A.M., Ph.D., Professor of Microscopic Anatomy in the Northwestern University Medical School, Chicago. With 368 illustrations (many in colours). London and Philadelphia: W. B. Saunders Company. 1915. Pp. 400. Price 17*s.* net.

IF this text-book represents the actual course on this subject given in the Northwestern University Medical School of Chicago, then it is evident the medical students of that University obtain a fuller and more practical course on this subject than falls to the fortune of our students at home. It represents an attempt to combine descriptions of vertebrate embryos which are studied in the laboratory with an account of human embryology especially adapted to the medical student. The emphasis in this sentence is clearly on the word laboratory as opposed to mere descriptive lectures or demonstrations. The author appeals for a greater attention to the study of embryology because it affords a comprehensive understanding of gross anatomy of the adult, and also because it explains the occurrence of many anomalies as well as certain pathological changes in the tissues. We quite agree with him, but in a medical course already overburdened with various subjects our wonder is how the average medical student can find time to carry out the many manipulations required for the dissection of pig embryos which are so carefully described and well illustrated in the text. The chapters on human organogenesis are partly based on Keibel and Mall's "Human Embryology."

The following is the arrangement of the subject matter: the germ cell, segmentation and formation of the germ layers, study of chick embryos, fœtal membranes and early human embryos, pig embryos and methods of dissecting them, the development of face, palate, tongue, salivary glands, entodermal canal and its derivatives, urogenital and vascular systems, histogenesis, morphogenesis of the central and peripheral nervous system.

A list of about a dozen of the newer principal text-books is given for reference. The illustrations are numerous, bold, clear, and well printed. Some are borrowed and their sources duly acknowledged. Careful descriptions are given of the various sections of embryos which are inserted in the text, and rather full descriptions of them necessarily occupy a considerable part of the text itself. Moreover, the magnification is carefully stated. Some of the illustrations are more or less semi-diagrammatic "reconstructions" of embryos in various stages of development. A very readable account is given of early human embryos and their membranes. About 70 pages are devoted to the study of pig embryos and their organs.

This is a lucid, comprehensive, and yet not too extensive text-book, which we cordially recommend as an attractive, practical, and succinct presentation of the main facts of vertebrate embryology. The illustrations are admirably drawn and really instructive.

LIBRARY TABLE.

An Ethical Problem, or Sidelights upon Scientific Experimentation on Man and Animals. By ALBERT LEFFINGWELL, M.D. New York: C. P. Farrell. 1915. Pp. 369.—The purpose of this book is set forth in the preface as follows: "An ethical problem exists. It concerns not the prevention of all experimentation upon animals, but rather the abolition of its cruelty, its secrecy, its abuse." In a postscript to the preface the author goes out of his way to comment on the horror of the present great struggle between the nations, and expresses the hope that "the insolence which deems the promise of a nation to be no better than a 'scrap of paper' shall meet its due recompense." As he has dragged in the war, we may be permitted to call attention to the fact that speaking in the Reichstag on May 28th the German Chancellor, Dr. von Bethmann-Hollweg, referring to Italy's joining the Allies, had the effrontery to say: "Italian statesmen have no right to measure the trustworthiness of other nations in the same proportion as they measured their own loyalty to a treaty. Germany by her word guaranteed that the concessions would be carried through. There was no occasion for distrust." The application of this parable will be found in the following words taken from Chapter XV. of the book before us entitled "Unfair Methods of Controversy": "One phase of the vivisection controversy is of singular significance. It is the peculiar tendency to unfairness which the advocates of unrestricted experimentation seem to display in every discussion regarding the practice; ...... it would seem to be impossible for anyone writing in advocacy of unlimited and unrestricted vivisection to state fairly the views to which he is opposed." Considering the repeated and continuous career of demonstrated misstatement and falsehood that has throughout characterised the crusade against scientific research, of which notable examples were given in Dr. W. W. Keen's book reviewed in these columns recently, this is quite in Bethmann-Hollweg's vein.

The Arcana of Freemasonry. By ALBERT CHURCHWARD, M.D. Brux., M.R.C.P. Edin. London George Allen and Unwin. 1915. Price 7*s.* 6*d.* net. Pp. 326.—This book is dedicated by the author to "all my brother Masons, of whatever clime and whatever creed, who take an interest in Masonic research," and is made up of a series of lectures, some of which have already appeared in the *Freemason.* This being so, the general reader will find the book somewhat recondite, but some of the chapters will appeal to those who take an interest in ritual and symbolism. Thus, Chapter IV. deals with the Divine Name, Chapter IX. with the origin and explanation of some Masonic signs and symbols, and Chapter X. with Egyptology and Masonry. (Masonry, according to Dr. Churchward, has its root in Egypt.) Chapter XII., the Operative Masons, discusses the various symbols and figures upon which the ground-plans of temples and other buildings were founded, an interesting subject, which is treated in a manner more suited to the general reader by Lethaby in his book, "Architecture, Mysticism, and Myth." We have read Dr. Churchward's book with interest, and perhaps the best comment upon it is the phrase of that learned member of our own profession, Sir Thomas Browne, who surely would recognise Dr. Churchward as a kindred spirit: "All things began in Order, so shall they end, and so shall they begin again, according to the Ordainer of Order and Mystical Mathematicks of the City of Heaven."

Index Catalogue of the Library of the Surgeon-General's Office, U.S. Army. Authors and Subjects. Second Series, Vol. XIX. U—Uzielli. Washington: Government Printing Office. 1914. Pp. 674. Price $2.—The present volume of this storehouse of all the literature of medicine—not of books only, but of pamphlets and individual articles in the medical press of the world—opens with six pages of additional abbreviations for the titles of medical periodicals to which reference is made. Among the important headings which embrace references to a wide area of literature are: United States (70 pages), Unna (4¾ pages), Urethra (41 pages), Urinary and Urine (105½ pages), and Uterus (292 pages). As a reference work to the medical literature, ancient and modern, of the entire world this laborious compilation stands unequalled.

MISCELLANEOUS VOLUMES.

UNDER the title of *Leper Houses and Mediæval Hospitals* (London: H. K. Lewis. Pp. 47. Price 1*s.* net) has been issued a reprint of the FitzPatrick lectures delivered by Dr. CHARLES A. MERCIER before the Royal College of Physicians of London on Nov. 5th and 10th, 1914, a full abstract of which appeared in our columns on Jan. 2nd and 9th, 1915. The first lecture is devoted to a historical survey of leprosy up to the middle of the seventeenth century, by which time it had practically disappeared from Europe, and Dr. Mercier concludes by suggesting that tuberculosis as at present existing is a modified form of the ancient and mediæval leprosy: "I venture to put forward the hypothesis that the bacillus of leprosy has changed in the course of time into the tubercular bacillus." The second lecture mainly deals with the constitution and management of leper and other hospitals. Our forefathers were generous in many ways to "Christ's poor," but they were also thrifty. Thus Henry IV. confirmed to the hospital of St. Giles, near Maldon, in Essex, that the master thereof was to have towards the maintenance of the leprous burghers of the said town the forfeitures of bread, ale, and fish that was not good. Some years before Henry IV.—i.e., in 1384—the Parliament of Scone had provided that "gif ony man bring to the merkit corrupt swine or salmond to be sauld they sall be taken by the bailies and inconteinent without any question at all sall be sent to the lipperfolke, and gif ther be no lipperfolke they sall be destroyed uterlie." Dr. Mercier's lectures naturally give only an outline of the important subject with which he deals. Mediæval hospitals were so bound up with mediæval life that their history, foundation, life, decline, and fall form a very large matter for treatment. Any reader of Dr. Mercier's lectures who may desire to go further into the matter will find in Miss Mary Clay's "The Mediæval Hospitals of England" an excellent book dealing with a general view of the subject, and a copious bibliography containing references to many books and papers dealing with details.

Two new volumes have been added to the "Pocket-Guide Series," published at 1*s.* each by The Scientific Press. The first is *The Muscular System,* by HAROLD BURROWS, M.B., B.S. Lond., F.R.C.S. Eng., in which the most important features of the anatomy of the skeletal muscles with their functions and nerve supplies are summarised. The second is *Notes on the Nervous System,* by EDWIN L. ASH, M.D. Lond., which contains a similar summary of the elementary anatomy and physiology of the human nervous system. These are specimens of a class of books which appeal to medical students and nurses. With regard to the students, we repeat the warning to which we have had occasion so frequently to give utterance—that such condensed guides as these can be serviceable only if properly used for reviewing knowledge acquired practically and by study of fuller works, if they are used as substitutes in either direction they are likely to be pernicious rather than useful.

The publication of the new Pharmacopœia of 1914 has been naturally followed by new editions of Pocket Prescribers and Summaries of Materia Medica. *A Conspectus of the Principal Changes of the British Pharmacopœia, 1914,* by J. H. WILLIAMS, F.C.S. (London: Corbyn, Stacey, and Co., Limited. 1915. Price 1*s.*) contains an alphabetical list of the preparations in the new Pharmacopœia, with their doses in Imperial measure, as well as in the decimal measures adopted by the Pharmacopœia and new preparations or those which have been altered from the old Pharmacopœia are indicated by a marginal letter. Preparations of the preceding Pharmacopœia which have been omitted in the present one are given in italics in their alphabetical order. There is a useful critical introduction.——*Husband's Students' Pocket Prescriber and Guide to Prescription Writing,* in its fifth edition, by Dr. DAVID MITCHELL MACDONALD (Edinburgh: E. and S. Livingstone. 1915. Pp. 122. Price 1*s.* 6*d.* net), also has been revised in accordance with the new Pharmacopœia, and so has the *Posological Tables, Appendix on Poisons, Index of Diseases and Medicines arranged according to their Actions,* fourth edition, by Dr. WILLIAM CRAIG (Same publishers and date. Pp. 132. Price 1*s.* net). Both these booklets are too well known to need any detailed description.——Yet another is the *Supplement to the British Pharmaceutical Codex, 1911,* published under the Direction of the Council of the Pharmaceutical Society of Great Britain (London: Pharmaceutical Press. 1915. Pp. 75. Price 1*s.* net), which contains particulars of important additions and alterations which have become necessary since that work was published, including new monographs, galenical formulæ, a series of formulæ for test solutions and microscopical stains, a list of the chemical equivalents of substances known under proprietary trade-names, and alterations in the text of the Codex that have been rendered necessary by the 1914 revision of the *British Pharmacopœia.* There is also a table of corrigenda for the Codex of 1911.

THE LANCET.

LONDON: SATURDAY, JUNE 19, 1915.

The Weapons of Chemistry.

METHODS of warfare have advanced enormously in technique though not in design, for the return by the Germans to the stink-pot of savagery, although elaborate scientific machinery is employed, remains a manifestation of primeval barbarity. Since the days of bows and arrows and battering-rams we seem to have made vast strides, but, as recent history clearly shows, the radical change has been chiefly a transition from physical to chemical resources. Improvements of mechanical transport and means of intercommunication, coupled with the growth of populations, have led to the formation of far larger armies, and the weapons of destruction have developed as the work required of them has grown immeasurably. And to a great extent the chemical activity has been modern. The gun itself is not a very archaic weapon, and there are still preserved amongst us early specimens of it in the shape of the flint-lock musket, with its attached ramrod for driving home the powder. It is only comparatively recently, too, that the machine gun has succeeded the cannon. Gunpowder was the only explosive known for a long time, and it was not until about 30 years ago that it was gradually replaced by the cartridge still with gunpowder in it, but later with a smokeless explosive. The introduction of the smokeless explosive or of nitro-compounds in general was the beginning of a rapid advance in firearms and artillery. It made possible the machine gun and the leviathan gun which now can project something like a ton's weight of metal to its target at a distance of 18 miles or more. Coupled with the art of the gunner it is chemistry that has made these achievements possible.

It is not difficult to find in other directions proofs that chemistry has very materially contributed to making modern systems of warfare the refinements of terror that they are. Can any more amazing agent for the purposes of war be mentioned than petrol itself? Not many years ago petrol was familiar chiefly as a light gas-smelling fluid which effectively removed grease spots from clothing, and outside its small employment in household and industrial affairs it had little application. Now it is the foundation of the gigantic motor industry. While the internal combustion engine has revolutionised the world's methods of propulsion incidentally in peace time, bringing the motor-bus and the taxi-cab into being, it has made possible the aeroplane, the dirigible, and the submarine, all of which are stern potentialities in modern warfare and are exercising a far-reaching influence on the issue of the struggle. The distillation methods of the chemist isolated this readily gasified liquid from the black viscid mass exuding from the oil well. And the submarine demands another chemical service; its crew must be kept alive while the craft is submerged, and chemistry steps in and supplies compressed oxygen to support the lives of the crews. The work of the chemist in these directions is well known to all, but recent events may well lead us to wonder whether the service of chemistry is going to be requisitioned for war purposes unaided by arms or artillery. It would be rash to assume that the future quarrels between nations are likely to be decided by the side which possesses a subtler knowledge of chemistry than the other; to talk of this war, as some are doing, as "a chemists' war" is to lose a sense of proportion, and there is little reason to suppose that subsequent events will show, for example, that poisons adroitly used will oust the accurately aimed bullet and shell. Discussion has been busy, since the enemy employed asphyxiating gases as a weapon in the field, in regard to the shapes which retaliation by this method could take. Glib references are made to the possible use of potent poisons, arsenical gases, prussic acid, or some death-dealing substance which shall improve upon the chlorine compound adopted by the enemy. It is well to remember that there is evidence that the enemy has seriously and systematically studied this question for some time, and we may be fairly certain that the gas used was decided upon after considerable trials as the most available and practicable for the ghastly ends in view. At all events, such other deadly materials as may be available are as much in the enemy's hands as in ours, and neither side would be likely to gain any permanent benefit by such machinations. We must not dismiss as impracticable the wilder dreams of the chemical poisoner, for in chemistry it would seem that no sooner is a suggestion dismissed as foolish than it at once appears in the form of accomplished fact; but we lean to the belief that the capacities of gas poisoning have been exhibited to the full. The distribution of poisons by means of bombs may add a degree of certainty to the murderous plan. The conveyance of a bank of gas along a definite line by air currents cannot always be depended upon, and it has already happened that the liberated gas has come back in boomerang fashion upon the ranks from which it was projected.

Does the time approach when owing to the high developments of chemical and physical science warfare will become well-nigh impossible? The speculation will claim greater attention in view of the new resources of the present war. According to this view, the race for supremacy will be won by that nation which is first in making fresh scientific discoveries. Possibly explosives may be rendered useless when invisible means are found to fire them from great distances, as might well prove to be the case in these days of wireless waves or radiations and projections. It would be a remarkable outcome of scientific discovery applied to modern methods of warfare if by their precision and certainty the new weapons automatically extinguished themselves. Mental subtlety may thus defeat its own ends, and as future struggles are not likely to be decided by a reversion to old-fashioned fighting methods, arbitration should at length succeed. But the man of the future in war, as he is in medicine, would seem to be the chemist.

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Cervical Gland Tuberculosis.

THE frequency with which enlarged cervical lymphatic glands occur renders an investigation in regard to their etiology a very interesting one. Much controversy has occurred as to the identity or diversity of the organisms which produce the condition, especially as to whether the human or bovine type of the tubercle bacillus is the more common. More recently another point has arisen—namely, whether atypical tubercle bacilli can be isolated in cases of cervical gland tuberculosis. We publish this week an investigation by Dr. A. STANLEY GRIFFITH into the subject, and he mentions that of the several observers who have made bacteriological investigations of tuberculous glands in the neck DUVAL alone claims to have isolated such organisms. These cultures bear no resemblance, judging from the information given as to cultural characters and virulence, to any tubercle bacilli hitherto described. DUVAL'S results are obviously exceptional and require corroboration before they can be accepted. The possibility of such bacilli being found in tuberculous cervical glands is, however, of some interest, inasmuch as this is the only form of tuberculosis of which lupus has been observed to be a direct sequela. It is further noteworthy that about 12 per cent. of the cases of lupus which Dr. GRIFFITH has examined have followed tuberculosis of the cervical glands, and in all but one of these cases the lupoid lesions have yielded atypical tubercle bacilli.

Dr. GRIFFITH gives the results of observations on material obtained by surgical operation from 110 persons, including children, adolescents, and adults. In the majority of the cases the actual substance consisted of lymphatic gland tissue. He divides the cases into three groups. In the first the glands were not macroscopically tuberculous and did not produce tuberculosis in guinea-pigs. Efforts to inoculate guinea-pigs from the glands in the second group of patients also proved negative, although the glands were obviously of a tuberculous character, and in many instances tubercle bacilli were found in smear preparations of the emulsions used for inoculation. In the third group, comprising 71 of the 110 cases, the original material produced tuberculosis in guinea-pigs, and cultures were obtained. It is to this group that special attention may be directed. The opinion has been expressed by many observers that the bovine type of tubercle bacillus is chiefly to be found in young life, whilst the human type is more common after 10 or 15 years of age. This is well indicated by the statistics submitted by Dr. GRIFFITH, for he shows that the proportion of bovine infections is highest in children under 5 years of age, diminishing as age advances. But in his cases the percentage of adults over 20 years of age infected with bovine tubercle bacilli is remarkably great. According to these figures, there is a marked contrast between cervical gland tuberculosis in the adult and pulmonary tuberculosis in which the bovine type is comparatively rarely found. In another table Dr. GRIFFITH analyses the cases in accordance with the locality from which they were derived. We agree that the figures are not large enough for comparative statistical purposes as between different centres of population, but none of the localities investigated seemed to enjoy freedom from risk of infection with bovine tubercle bacilli.

In the second group of cases referred to by Dr. GRIFFITH inoculation failed to produce tuberculosis in guinea-pigs; this fact would seem to bear on the prognosis of cervical gland tuberculosis. It is recognised that in glandular tuberculosis there is a tendency to spontaneous cure, and probably in the patients belonging to this group arrest of the active processes had taken place. It would be of interest to know whether the disease produced by the bovine type of tubercle bacilli is more prone to spontaneous cure than is that occasioned by the human type. Dr. GRIFFITH makes some reference to this point, but further investigation into the matter is desirable. The results of operation on enlarged glands in the neck are well known to be favourable, so are the effects of exposure to pure air and good feeding; but in estimating the comparative results of any therapeutic measures employed in connexion with tuberculous glands the tendency to spontaneous arrest must be remembered, or false ideas on methods of treatment may easily arise. Indeed, the same principle applies to the use of remedies in all forms of tuberculosis: the development of the natural resistance of the body is of primary importance, and placing the patient under favourable hygienic conditions in every way is the easiest and most practical manner in which the desired effect may be produced. The incidence of cervical gland tuberculosis is by no means confined to children or adults in large cities. In the towns and villages on the coasts of Devonshire and Cornwall, where young patients are so often sent in order to obtain the benefit of the fresh air, many children who have been born and brought up in the districts are found to suffer from the same condition, and the explanation is forthcoming when these children are seen in the shut-up rooms and unhygienic surroundings of their homes. The importance of pure air by night and by day, and suitable nourishment is accentuated by such facts.

Annotations.

"Ne quid nimis."

HOLIDAYS AND HEALTH.

IN normal times the advent of June brings with it thoughts of holidays. But these are not normal times. Owing to the great war but little, if any, consideration is being given to the annual vacation. The possibilities of the continent are gone for the time, the withdrawal of all cheap facilities on the railway will check the traveller at home, and with a sovereign only buying the same quantity of food as 15s. bought a year ago everyone has less money to spend. And as the days, the weeks, and the months of the war roll on so the demand for labour everywhere increases in every phase of our national life. Yet those who badly feel the need of some respite must be advised to take it, if they can get it, however ill-attuned they may feel, for otherwise the period may be shortened during which their work will be of any value; and especially is it the town-dweller who needs a new environment if only for a few days. The practical question, of course, is whether it would be possible to combine two sets of circumstances in some way that might be productive for the nation. There is a great deal of work to be done throughout the countryside, and a large number of urban amateurs should be available for such work from now onwards. To these the employers of labour might look for some of the help that is needed in the busy agricultural season, when even in normal times there is a difficulty in securing the required hands. Thousands of individuals at the end of July—females as well as males—will be "let loose," as it were, from their everyday toil, a very large number with a holiday of varying periods extending from two to four weeks, and many could arrange perhaps to be absent from their desks for a longer period. The suggestions which have been put forward in various quarters that these holiday-makers should occupy their time in assisting in the agriculture of the country are heartily to be commended; we should be delighted to hear that the stage of suggestion had passed to that of arrangement. We can rest assured that there will be no holidays—in the general acceptance of the term—for our enemy civil populations this summer. The Germans, for example, will not, where they can possibly help it, allow their industries to suffer for the want of labour, and it behoves all of us to see that our relaxation period is not wasted. As far as is possible the work which many of our fighting men would have been doing at home ought to be carried on by all unoccupied hands, and there is bound to be a great demand for labour in our agricultural industry. To those engaged in sedentary occupations and all brain-workers a holiday on the land helping the farmer garner in the harvest would be a real holiday both from the mental and physical health point of view. The change of occupation, change of environment, change of scene, and change of diet would prove to many an excellent tonic—as beneficial as "training" has been to those who left their offices for a suit of khaki. There should be a ready and quick response to any call for help from our holiday-makers, but the value of such assistance would be multiplied a thousand-fold if it were organised and put upon a definite basis. The grave error made by all citizens of towns is to regard agricultural labour as unskilled, whereas much of it is of a highly technical quality. The assistance of casual holiday makers need not be despised, but if that assistance could be sifted, coördinated, and supplied in regular shifts to meet ascertained shortages, its value would be incalculably enhanced.

THE VIABILITY OF THE PLAGUE BACILLUS.

THE experience of our Indian plague experts seems to be that the life of the bacillus pestis outside the living animal body is comparatively short, at least under the conditions associated with the climate of India. On the other hand, certain American experts, and among them Dr. Rosenau, express the opinion that the plague bacillus after all is not such a frail organism as was formerly supposed, and that with the help of cold and moisture its life may be prolonged for a considerable period outside the body of an animal host. Given, therefore, abundant albuminous material, a low temperature, and a moist environment, the bacillus pestis may remain viable for a long time. Such conditions presumably might be found when the body of a plague patient has been buried in suitable soil. In the Proceedings of the Medical Association of the Isthmian Canal Zone (Vol. V., Part 2), recently published, a paper is contributed by Dr. H. C. Clark bearing on this subject, and entitled "Note on the Viability of Bacillus Pestis in a Cadaver buried in Quicklime." It appears from this paper that certain excavations were found necessary on Flamenco Island in the Bay of Panama, involving the removal from its grave of the body of a plague patient who had died two years and eight months previously and had been buried in quicklime. The opportunity was taken during the removal of the corpse to ascertain if any living plague bacilli were present in the body. On opening the grave the corpse was found enclosed in lime except where the body rested on the ground, the bottom of the coffin having become disintegrated. The skeleton was perfectly dry, and there was no evidence remaining of visceral tissue or clothing. The skull and femur were selected for special examination. A sterile wire with cotton swab was passed up the foramen magnum and applied to the inner table of the cranial vault, then withdrawn, and agar plates were inoculated from the swab. The condyle of the femur was split and material similarly obtained from the cancellous bone. The agar plates were examined later by Dr. L. B. Bates, bacteriologist to the Ancon Board of Health, who reported that the cultures showed a variety of bacteria, yeasts, and moulds, and that guinea-pigs inoculated with the material had remained in good health. The results were, therefore, entirely negative. Dr. Clark is of opinion that though the amount of material infected by plague bacilli in this body was originally large, yet no trace of it remained at the end of two years and eight months. Probably the corpse might have been removed from its grave at a much earlier period without danger to anyone. No doubt, as he says, the saprophytic organisms greatly aided the quicklime in destroying the plague bacilli. It appears to us that the results observed in this instance were only such as might have been expected, for the experiments in this country of Klein and others have shown that with the advance of putrefaction in a corpse all non-sporing pathogenic organisms are quickly destroyed, even the most persistent of them disappearing within a few weeks.

FRENCH OBSERVATIONS ON THE EFFECTS OF THE IRRITANT GASES USED BY THE GERMANS.

At a meeting of the Académie de Médecine of Paris Dr. R. D. de la Rivière, of the Institut Pasteur, and Professor J. Leclercq, of Lille, have now made an important pathological report on the effects of the irritant gases—chlorine and bromine—used by the Germans. Its interest is increased by observations that so far have not been recorded by our army surgeons. Our *confrères* had under observation in hospital at Calais 112 soldiers who had been exposed to gas at Langhemarck. As the distance from the fighting line is short they were able to examine the patients a few hours after the intoxication. The irritation of the respiratory mucous membrane caused abundant expectoration which was soon tinged with blood. Those who could not fly died vomiting blood. Others, much prostrated, crawled to the rear vomiting and expectorating blood, and they passed bloody urine. On admission to hospital the eyes were watering and the eyelids were swollen. The cheeks and lips were violaceous red, the lips were violaceous, the features were drawn, and the nose was pinched. The patients were harassed by dyspnœa and incessant cough. Some complained of a stitch in the side. There was abundant rosy frothy expectoration, sometimes frankly bloody. Speech was painful and jerky. The majority of the patients presented symptoms of inflammation of the whole respiratory tract extending to the finest bronchial tubes. In these the condition was not grave. But in others the pulmonary lesion was severe and took the form of broncho-pneumonia or gangrene of the lungs. Two patients presented the phenomena of hæmolytic icterus. Another showed hæmoglobinuria for several days. Several had persistent albuminuria. Most of the patients passed concentrated high-coloured urine containing much biliary pigment. At the onset the sputum was characterised by desquamative elements and some polynuclear cells, but soon it was modified so as to indicate congestion and, in some cases, gangrene of the lung. At the onset the microbial flora in the sputum was ordinary, but sometimes anaerobes were found, the bacillus perfringens in particular. In the cases of gangrene of the lung the microbial flora was rich in anaerobes (bacillus perfringens, bacillus serpens, and bacillus ramosus). The findings in a necropsy in a case of death from pneumonia confirmed the conclusions drawn from the clinical phenomena. There were congestion of the whole respiratory tract, injection of the digestive tube, and massive degeneration of the liver, spleen, and kidneys. Massive pneumonia of the right lung, with gangrene here and there at the base, was also found.

THE TREATMENT OF RICKETS.

Dr. Giuseppe Carpani, from his pathological and clinical researches published recently in *Il Morgagni*, has formed the opinion that rickets is a disease of bony development, and that four glands—thymus, thyroid, pituitary, and adrenal—have a marked stimulant and regulating influence over this development. Any one of these glands may be deficient in its function and produce a dystrophic condition which predisposes to rickets. Owing to the correlation existing between these endocrinic glands, a disturbance of function in one of them causes disturbance of function in the others, so that the complex dystrophic picture is the result of failure in function of the entire group. Hence, the indication is to substitute pluriglandular for uniglandular opotherapy, which has hitherto given somewhat favourable but inconstant results. The author gave powdered and dried gland substances *in toto*, in doses suitable to age, in milk daily for 50 days, with the omission of one week after the first month. He noticed that improvement was generally rapid and striking during the first weeks of the treatment, the functions of digestion and assimilation being first influenced, then those of the nervous system. In the following weeks the progress was slower, and beneficial results were observed in the blood and osseous system. The treatment was always well borne. An interesting point observed by the author was that in the cases of children to whom calcium salts were administered at the same time no special rapidity or efficacy of cure was seen, a fact of some importance as bearing on the question of the calcium content in rickety bones, the fundamental fact seeming to be not deficiency of calcium but inability of the tissues to fix it.

THE MARRIAGE OF LEPERS.

The Russian Medical Council has considered the question raised by the Holy Synod of the permission to lepers to marry amongst themselves, and has given the opinion that whilst lepers may not be married to healthy mates there is no objection to lepers marrying lepers. The Council thinks that in respect to the possible influence of the leprosy of the parents on their children in the spread of the disease the factor is relatively weak; besides, the birth-rate in such cases is very low, and the percentage of infant leprosy under such conditions is very small—about 5. With that reply we are in agreement generally. There can be little doubt that the best way of isolating lepers in affected countries is to intern them, under proper medical supervision, in special colonies or settlements where they can, as far as is practicable, lead active and useful lives, engaged in farming and other suitable occupations. Leper asylums and such institutions are best reserved for cases of old and advanced disease where incapacity for employment has been brought about by the ravages of the malady. In the leper colonies or settlements patients of both sexes have to be isolated, and we would raise no objection under certain conditions to the union of these persons if they desired to marry. Young leprous adults of both sexes are more likely to become more hopeful, contented with their lot, if they have a home of their own and a family life, even of a limited extent. The fertility of leper marriages is not great, and as the leprosy advances impotence usually develops. It is imperative, however, that arrangements should be made in advance, and the reasons carefully explained beforehand to the leprous parents, to remove at once any newly born infant from the custody of its mother to a distant home provided by the authorities where the child may grow up without danger of acquiring the infection from its maternal parent. Leprosy is not believed to be a hereditary disease, but close and intimate contact, such as that between a mother and child, is regarded as affording the surest means of conveying the infection from one person to another. We freely admit that the parting of the leprous mother from her newly born child would be painful to her, but in the interests of the child such parting is absolutely necessary and should be regarded as inevitable by both parents. The lot of the leper is admittedly a hard one, and whatever can be done, consistent with medical knowledge and science, should be done in order to alleviate as far as possible the hardships of these unhappy sufferers. With the indicated reservations, we agree with the Russian Medical Council in their view that the marriage of one leprous person with another is, under certain circumstances, permissible.

PNEUMOCOCCÆMIA.

Septicæmia due to the diplococcus has lately assumed a new importance in human pathology, and Banti's idea that the pulmonary localisation might be due to the fixation of the circulating micro-organism by some predilection of the lung is acquiring more and more force and consistency with truth. Dr. T. Pontano has just published in *Il Policlinico* three very interesting cases bearing on this subject. Without going so far as to affirm absolutely that the diplococcus always enters the circulation in the first instance and that a condition of septicæmia always accompanies the pneumonia, the author considers that these cases show that the diplococcus can enter the circulation by little heeded routes such as the tonsils or lesions of mucous membrane, without leaving any trace of its passage, and may cause septicæmia with pulmonary localisation, or sparing the lung, with other local manifestations. The clinical features of diplococcic septicæmia do not differ from those of the ordinary forms, but two are worthy of special attention—namely, the intermittence of the fever with rigors and sweating, similar to suppurative fever, and the intense leucocytosis. The first of Dr. Pontano's cases is the most interesting. There had been an attack of lobar pneumonia a year previously, and the symptoms were those of a pseudo-tetanus, painful contractions of the muscles of the vertebral column, trunk, and limbs, with Kernig's sign; there was also a general febrile condition. The cerebro-spinal fluid was sterile, but a lanceolate capsulated diplococcus was cultivated from the blood which proved fatal to rabbits. Another case described by him was one of purulent meningitis with thrombotic endocarditis in which an identical micro-organism was cultivated from the blood. The lungs were normal.

ACIDOSIS IN CHILDREN.

It is suggested that Naunyn was the first to associate the symptoms of acidosis with their cause, an altered metabolism leading to definite blood changes. That the entity of acidosis is a very real clinical condition especially in children has been recently emphasised by Dr. A. A. Howard in a valuable paper in the *Boston Medical and Surgical Journal*. It is generally supposed to be related to the cyclical vomiting in children, but Dr. Howard suggests that this latter condition is extremely rare in absence of certain reasonably definite and immediate predisposing causes. He rather suggests, it seems, that certain children are predisposed to the condition of acidosis, and are at times especially susceptible to the train of symptoms it causes. Usually an immediate exciting cause for acidosis is present, and an acute infection is the most frequent of these causes. It is necessary to distinguish the clinical cases of acidosis from those which merely show the presence of acetone or diacetic acid in the urine, for this latter phenomenon is not uncommon. Acidosis is perhaps commoner in the children of the upper and middle classes. Boys and girls seem equally liable. It is as common below the age of 2 as above. The symptoms are often ushered in by premonitory loss of appetite, restlessness, or irritability. Constipation at this stage is frequent. Then the mouth becomes dry, acetone appears in the breath, and may be demonstrated in the urine. The respiration is rapid and there may be nausea or vomiting. Vomiting was a symptom, usually an early one, in 51 out of 64 of Dr. Howard's cases. It is significant to note, too, that in the 13 cases in which no vomiting occurred treatment directed to the acidosis had been begun early. In severe cases of acidosis the child passes on to listlessness and drowsiness, the eyes become sunken, and the breathing may become irregular and Cheyne-Stokes like in type. There were 3 fatal cases in the series of 64. The clinical impression in many of these cases is that of a degree of illness and exhaustion which cannot be accounted for by the local signs or known lesion present. It is important to recognise the condition, as treatment directed to its relief may be life-saving in certain circumstances. Sodium bicarbonate given, alternately with glucose, by mouth is the best measure. Even if nausea be present, after one or two attempts the patient can usually retain the drug given in this way. The effects of this treatment are eminently good and often rapid in action. All food must be stopped and return to it should not be uselessly hurried. The need for seeking the presence of diacetic acid or acetone in the urine in cases of this kind is obvious in its important relationship to treatment.

MALARIA ARISING IN A NON-MALARIAL DISTRICT.

In the *Medical Journal of Australia* Dr. Sydney Jamieson has reported a case of considerable importance, as it shows the possibility of malaria arising in a non-malarial district. A "scrub cutter and cleaner," aged 58 years, working in the Gosford district of New South Wales, was admitted into Sydney Hospital on Jan. 5th, 1915, complaining of headache, shivering attacks, and lassitude for ten days. He was born in Somersetshire, England. In 1880 he left Plymouth by a sailing vessel for Sydney, where he arrived without having touched at any other port. He worked as a labourer in the Parramatta district. In 1884 he went to Broken Hill *viâ* Port Pirie and after two months returned to Sydney; since that time he had lived in New South Wales. For 30 years he had been subject to slight cough. On examination he looked pale and cachectic. At the bases of the lungs a few high-pitched rhonchi were heard. The spleen was not enlarged. On the day after admission the temperature rose to 102·8° F. at 8 P.M., but fell almost to normal after four hours. On the following afternoon it rose to 104·8° at 4 P.M., but at midnight had fallen to 97·8°. On every other day during the next fortnight the temperature rose in the same way, ranging from 101·5° to 104°. The attacks were associated with headache and shivering and ended in profuse perspiration. They showed an unmistakable resemblance to simple tertian malaria, though the patient had never resided in a malarial district. On Jan. 8th the blood was examined and gave a leucocyte count of 10,125 and a negative Widal reaction. In the sputum the prevailing organism was the staphylococcus aureus, and there were no tubercle bacilli. On Jan. 12th a careful search was made for the plasmodium malariæ in the blood without result, but on the 18th the tertian type of organism was found in considerable numbers. The disease quickly yielded to quinine. Both the anopheles and the stegomyia mosquitoes are present in New South Wales, but no case of malaria of local origin appears to have been reported previously. It is known that infected mosquitoes can convey the plasmodium malariæ in non-malarial climates. The classical experiment in which Sir Patrick Manson's son infected himself in London by means of a mosquito brought from Rome showed this. Mosquitoes do not appear to travel very far, but in exceptional instances may be carried long distances by ships and trains. A considerable number of soldiers infected with malaria have returned to Australia from New Guinea, but the patient had never been brought into contact with any of them. Dr. Jamieson suggests the possibility of malaria becoming endemic in Australia.

BRITISH PHARMACEUTICAL CONFERENCE.

THE annual meeting of the British Pharmaceutical Conference will be held at 17, Bloomsbury-square, London, on July 14th, under the presidency of Captain E. Saville Peck, M.A. In view of the fact that the majority of members of the Conference are directly or indirectly engaged in the prosecution of the war, the Executive Committee has decided to abandon entirely the social side of the meeting, and also to hold no meetings of the Science and Practice Sections. It may be remembered that in the ordinary course of things the annual meeting would have been held at Scarborough.

FALSE LOCALISING SIGNS IN CASES OF CEREBRAL TUMOUR.

THE practitioner familiar with the classical triad of symptoms—headache, vomiting, and optic neuritis—characteristic of cerebral tumour, should be on the look-out for cases where one or other or all of these symptoms may be wanting. They may fail, for instance, in progressive hemiplegia—i.e., in hemiplegia which is mild in degree at first and becomes progressively more serious; here the clinical type suggests increasing pressure by itself, whatever other signs are present or absent. Again, Jacksonian epilepsy is a suspicious symptom, though it occur monosymptomatically. Once more, a fair number of cases originally diagnosed as idiopathic epilepsy turn out eventually to be cases of cerebral tumour. It behoves the physician, therefore, to keep such cases under close and repeated observation, for as the disease progresses the diagnosis may have to be reconsidered. There is another type of case, however, where a diagnosis of intracranial neoplasm is correctly made, but where the localising, or rather the apparent localising, symptoms are misleading. Surgical intervention depends for its success on correct localisation, but even the expert is occasionally at fault in his localising diagnosis. Some types may briefly be mentioned. It is a fairly common experience to find frontal tumours with cerebellar signs and *vice versâ*. As a rule in such cases, also, right frontal tumours are diagnosed as left cerebellar and left as right. A probable explanation is that with increase of intracranial pressure there is a tendency for part of the cerebellum to be pushed into the foramen magnum, whence cerebellar pressure symptoms readily arise, and these may obscure the frontal symptoms inasmuch as the latter may be slight and not easy of detection. In any case of intracranial tumour, it should be remembered, indirect cerebellar symptoms may be present; and cases of temporal lobe tumour, for instance, have been recorded where the supposed pathognomonic cerebellar tests elaborated by Bárány have been positive. Another type of false localising signs is that where Jacksonian epilepsy is an indirect and not a direct symptom. Even strictly motor symptoms may mislead. Various instances have been put on record of Jacksonian fits arising from stimuli originating outside the motor area proper. In some cases where internal hydrocephalus results from a basal or subtentorial tumour motor symptoms may be present which are secondary and indirect, and therefore apt to confuse. Again, paresis or paralysis of one or other external rectus is probably of little localising value by itself, as in almost any case of subtentorial tumour, and in some supratentorial cases too, the symptom may signify only a heightened intracranial pressure and nothing more. In fact, it is well never to lose sight of the obvious fact that if a foreign body grows within the cranial cavity it can only do so at the expense of other tissues, and such secondary changes as local evascularisation, œdema, ventricular dilatation, pressure of one or other part of the cranial contents against some bony prominence or into some bony ring may effectually mask the actual lesion and lead to erroneous localisation. For this reason minute attention should always be devoted to the earliest symptoms in point of time, however slight or transient they may seem to have been, since they, rather than any of the more prominent but subsequent ones, may really point to the exact site of the disease. Another reason is that there may be a direct transference of functional disturbance from one part of a linked physiological system to another through the medium of so-called diaschisis, whereby, apart from extraneous causes such as have been enumerated above, symptoms are produced in one area, the morbid condition giving rise to which is, in fact, situated in a different, though physiologically connected, area. Thus in some cases of tumour of the motor cortex, with Jacksonian epilepsy, twitching of the corresponding muscular groups homolateral to the lesion has been noted, by diaschisis from the affected motor area to the motor cortex of the opposite hemisphere. Some of these and other important considerations in the diagnosis of cerebral tumours are well illustrated in a series of cases carefully observed by Dr. S. P. Goodhart and Dr. H. Climenko, of the Montefiore Home and Hospital, New York, and published by them in the April number of the *Journal of Nervous and Mental Disease*.

AN Order in Council, dated June 10th, declares that the Province of Saskatchewan, in the Dominion of Canada, shall be deemed a separate British possession, and that the second part of the Medical Act, 1886, shall be deemed as from the date of the Order to apply to the said Province of Saskatchewan. The effect of this is to render medical degrees of that province under certain conditions registrable without examination in the colonial part of the Medical Register.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Dispensary Doctors as "Medical Advisers."

THERE is no doubt that a good deal of inconvenience to the sick poor has arisen from the fact of certain dispensary medical officers accepting the office of "medical adviser" to the Insurance Commissioners. The duties of the office entail travelling over wide areas, whereas dispensary medical officers are not allowed to leave their districts even for a day without making provision for the discharge of their duties. It is impossible for those who are medical advisers to make such arrangements since the profession disapproves of the office, and those who hold it are not assisted in any way by their medical neighbours. Some boards of guardians also have considered that the Poor-law duties have been neglected by the officers who are medical advisers, and have proposed to dismiss them from their appointments as Poor-law officers, but up to the present the Local Government Board has not sanctioned such action. Recently, however, a war vacancy having occurred in the Poor-law service of the Newry union, the guardians appointed Dr. T. Cronin as temporary medical officer. The Local Government Board has declined to sanction the appointment on the ground that Dr. Cronin is a "medical certifier" to the Insurance Commissioners, and that "the Board is not satisfied that he could attend efficiently to the wants of the sick poor" of the district.

A Students' Strike.

A certain number of the students at the school of the Royal College of Surgeons in Ireland struck work last week, as far as the department of anatomy was concerned, as a protest against the choice of the Council in the recent election of examiners in anatomy. It is usual for the professor of anatomy to be one of the examiners, but this year the professor is absent on military duty, and the students took umbrage at the fact that his deputy was not elected examiner. After a few days' abstention from work the students returned, pending the Council's considering their protest. The Council can hardly assent to the position that the election of examiners should be subject to veto by the prospective candidates.

The War Office and the Belfast Scheme for a Base Hospital.

A number of Irish medical men, mainly colleagues hailing from Belfast and its immediate vicinity, and, numbering some well-known surgeons, physicians pathologists, and sanitarians, recently appealed to the Director-General of the Army Medical Department to be allowed to staff a base or stationary hospital at the front. The offer was that for periods of six months they would work as a band and succeed each other in relays of, say, 20 to 25 men at a time for half a year. In this way the War Office would acquire, they suggested, the help of some of the most experienced surgeons in Ireland, over military age, who, by manning a base hospital, would free younger men for other work. The War Office has been compelled to refuse this patriotic offer, as there are no regulations in force to enable it to be accepted or worked. The reply of the War Office is much resented in Belfast. As Mr. Lloyd George recently said at a public meeting in Liverpool, "In this tremendous crisis of the empire there is one thing we want less of than usual, and that is red tape. It takes such a long time to unwind and we can't spare the time."

Ulster Medical Society.

At the annual meeting of the Ulster Medical Society, held in the Medical Institute, Belfast, the following were elected office-bearers for the session 1915–16:—President: Dr. A. G. Robb. Vice-Presidents: Mr. T. A. Davidson and Dr. W. E. Hadden (Portadown). Treasurer: Dr. V. G. L. Fielden. Librarian: Dr. W. L. Storey. Secretary: Mr. S. T. Irwin. Editorial Secretary: Dr. C. G. Lowry. Council: Dr. G. A. Hicks, Mr. J. O'Doherty, Dr. J. C. Rankin, Dr. J. L. Rentoul (Lisburn), Dr. F. C. Smyth, and Mr. H. Stevenson.

The McQuitty Memorial Exhibition.

The McQuitty Memorial Exhibition, given for clinical work to senior students attending the Royal Victoria Hospital, has been awarded to Mr. E. G. B. Calvert.

June 15th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

A Hostel for Disabled Sailors and Soldiers.

AN urgent appeal for help for the crippled men discharged from navy and army hospitals has gone out in Scotland. These men are not infrequently under the necessity of returning to their homes, where they cannot have advice or help to equip them for the future. It is proposed to keep the crippled and disabled men at a hostel until they are fit for employment, and then to send them to the various institutions where they can be taught trades of suitable kinds. Edenhall, Kelso, has, through the kindness of Major Douglas, been taken for the purpose of a hostel, and will accommodate from 35 to 40 patients. By permission of the Berwickshire county directors, the hostel will be worked by the Coldstream Voluntary Aid Detachment under a fully trained nurse. As the hostel will be supported by voluntary subscriptions help is earnestly requested, and subscriptions should be sent to the treasurer, Mr. Douglas, Mansfield, Coldstream. All information regarding the hostel and admittance of patients will be given by Lady Isobel Douglas Home, The Horset, Coldstream, who has issued the appeal. Surgeon-General G. D. Bourke, Deputy Director of the Army Medical Service, has given this scheme his support.

The Edinburgh Academical Club.

The annual general meeting of the Edinburgh Academical Club was held in Dowell's Rooms, Edinburgh, on Friday, June 11th. The Right Hon. Sir J. H. A. Macdonald, K.C.B., Lord Justice Clerk, President of the club, presided. The chairman, in moving the adoption of the annual report, referred to various matters dealt with. He said that about 800 Academicals had been serving the King in various capacities since the outbreak of war, and of these over 40 had been killed in action. The club has raised £1200 for a motor ambulance fund, and two ambulances of the latest War Office design, which were nearly ready for sending to the front, have been presented to the Scottish Branch of the British Red Cross Society.

An Ambulance Car from Linlithgowshire.

Under the supervision of ex-Provost Gordon, Bathgate, the inhabitants of Linlithgowshire recently subscribed towards the purchase of an ambulance motor-car for the use of the wounded soldiers at the front. On the afternoon of Wednesday, June 9th, the vehicle, a 16 h.p. Wolseley, with stretchers and fittings complete, was handed over to the Scottish Branch of the British Red Cross Society at 11, Blythswood-square, Glasgow, the headquarters of the Scottish Automobile Fleet. After the purchase of the car there was a balance of nearly £80, which was presented to the British Red Cross Society.

The Fire at Dunrobin Castle.

The modern portion of Dunrobin Castle, the Duke of Sutherland's famous Scottish palace, was largely destroyed by fire on June 13th. In the difficult task of combating the flames valuable assistance was rendered by Territorials who were in the neighbourhood, and also by a fire brigade section of the navy from Cromarty. All the wounded soldiers were rescued and removed in safety to accommodation that was found for them elsewhere. Unfortunately in the work of rescue Lieutenant Wilde, 2/5th Seaforth Highlanders, and two sailors were seriously injured and had to be removed to hospital.

The late Dr. E. W. Scott Carmichael.

The death occurred on June 12th, at his residence, 42, Palmerston-place, Edinburgh, of Edward William Scott Carmichael, Fellow of the Royal College of Surgeons, Edinburgh. Dr. Carmichael, who was in his forty-second year, came of a well-known medical family, for his father, Dr. James Carmichael, is a consulting physician to the Royal Hospital for Sick Children, and his grandfather was a much esteemed Edinburgh practitioner. Dr. Edward Carmichael was educated at the Edinburgh Academy and the University of Edinburgh. He studied subsequently in Berne, Berlin, Greifswald, London, Paris, and the United States. He was formerly senior demonstrator of anatomy in the New School of Medicine and assistant surgeon at the Royal Hospital for Sick Children, Edinburgh, at the Royal Infirmary, and at the Hospital for Diseases of Women. He also held the rank of captain in the 2nd Scottish General Hospital, Territorial Force. Dr. Carmichael was a frequent contributor of articles to the medical press. His literary work was stamped with scientific thoroughness, and it is to be hoped that the book upon which he had spent several years of work, and succeeded in completing only a week or two ago, will be published. He was an admirable speaker, and had the ability to inspire confidence in those who heard him. He leaves a widow and three young children.

The late Lieutenant D. G. Watson.

Lieutenant D. G. Watson, R.A.M.C., who has died of wounds received while on active service at the front, was the son of Mr. John Watson, B.A., headmaster of Broughton Higher Grade School, Edinburgh. He was a graduate of the University of Edinburgh in both Arts and Medicine. After graduating in Medicine Dr. Watson was appointed to a hospital at Windsor, and on the outbreak of war he joined the Royal Army Medical Corps. He had been at the front for several months, and when wounded was engaged in bringing in a stretcher party from one of the trenches under shell fire.

June 16th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Substitution of Hot Oxygen for Hot Air in the Sterilisation of Gangrenous Wounds.

M. Vignat has endeavoured to replace hot air by superheated oxygen in a large number of cases of septic gangrene following on deep charring. He considers this procedure superior to that of hot air. Its technique is very simple. An ordinary electric apparatus is used, and the source of air represented by the rotary pump is replaced by a cylinder furnished with a stop-cock. The current of oxygen can be regulated at will by means of this stop-cock. Certain precautions are necessary. The oxygen should never be used with Gaiffe's apparatus, as the oxygen produces with carburetted air an explosive mixture. In the passage of oxygen the generator of heat becomes heated more quickly, and in order not to damage it the rheostat which regulates the current intensity should be handled gently and progressively. It is necessary to be careful that the field in which compresses are situated in the neighbourhood of wounds is moist, as the action of the superheated oxygen is inflammatory. Oxygen seems to dry and sterilise moist gangrene better and more quickly than air. The action of heat is added to the action of the oxygen and also to the ozone which is produced, as is known, whenever oxygen is superheated.

The Destruction of Lice in Epidemics of Typhus Fever.

Dr. Delta, in the past Balkan campaigns, had frequent occasion to believe that the action of strong odours was destructive to lice, and he undertook numerous experiments on this subject. Living lice were put in the cavity of a piece of glass tubing 2 centimetres in diameter and 15 centimetres in length, plugged by means of two cotton wads loose enough to allow the circulation of air. On moistening one of the two wads with strong scent the insects withdrew little by little from the perfumed end and approached the opposite one. At the end of a certain time all the lice were dead. If the source of the odour was placed outside one of the corks the same phenomena were observed, followed by death, though naturally after a much longer time. In the control tubes in which the perfume was replaced by water, the lice remained alive moving freely in all directions. In another experiment a large tampon of cotton soaked with strong perfume was placed in the bottom of an upturned microscope shade. Above this tampon, but separated from it by a tripod of iron wire, was a piece of flannel a yard square, in the folds of which were a known number of living lice. At the end of a quarter of an hour, on the average of four experiments, the first louse was seen to emerge from the folds of the cloth and struggle to reach the open air. At the end of an hour four others disengaged themselves in like manner and remained on the surface without attempting to penetrate again into the interior, where the ten other insects were found motionless. Left in the open air four of them returned to life after a variable period of time. Finally it was shown that when the contact of the perfume and of the insect was made directly, the result was not long in being produced. The insect died in one or two minutes. In a recent epidemic of typhus fever at Alexandria in February, 1915, two distinct foci appeared, one in a camp of Bedouins in the desert, the other in the very centre of the town. Among the Bedouins were counted in all 96 cases and 52 in the town. The disease was attacked by the ordinary methods of disinfection of the locality and of articles of bedding and clothing. And here, too, the procedure of perfumed lotions was put into practice in a systematic fashion, and to bring out its advantage more clearly, washing with hot water and soap was foregone, washing from head to foot with eau de Cologne locally manufactured and of poor quality, but emitting a very powerful and persistent aroma alone being practised. Then the epidemic ceased. It is evident that these observations cannot definitely prove the efficaciousness of perfumed lotions, but the procedure is new and deserves at least a trial.

The Treatment of Large Wounds by Sterilised Sugared Radio-active Mud.

Dr. Gougerot has obtained good results in the treatment of wounds and intractable ulcers by the use of a mixture of radio-active mud with sugar. This treatment is simple and inexpensive. The radio-active mud is sold commercially in boxes containing a kilogramme. This mud is diluted with water saturated either with white sugar (saccharum) or glucose, so as to make a thick though fluid paste. It is sterilised in little bulbs in the autoclave at a temperature of from 100° to 110° C. The wound having been washed with boiled water or sugared water, is coated with a thick layer of the mixture and covered with an aseptic compress that has been sterilised in the autoclave, and is then dressed in the ordinary way. If possible the wound is left three, four, or six days without changing the dressing, which is removed by moistening the compresses with boiled water. It is washed to remove the mud and a fresh mud dressing applied. The mud which has been used may be recovered by filtering the wash water through blotting-paper and cloth and by sterilising it afresh. The radio-active mud causes stimulation of torpid tissues; the sugar supplies nourishment to them. The ulcers usually granulate (*bourgeonnent*) rapidly, the wound becomes red, vivid, often very congested. This treatment should be applied especially to the cicatrisation of large superficial or deep wounds like those of varicose ulcers, but should not be applied to fistulous ones in which suppuration is maintained by foreign bodies or foci of osteitis. It is necessary first to suppress these causes and then the dressings of sugared radio-active mud begin their utility in promoting cicatrisation.

Protection of the Skull against Wounds by a Metallic Headpiece.

M. Le Dentu and M. Devraigne drew the attention of the Academy of Medicine, at the first June meeting, to the use of a metallic headpiece as a preservative against wounds of the head. Such wounds have become very frequent and represent 13·33 per cent. of all wounds. The personal observations of M. Devraigne clearly establish the advantage to the soldiers of wearing metallic headpieces. Out of 55 soldiers hit in the head and treated by M. Devraigne, 42 were without such headpieces and 13 possessed one. Of the 42 soldiers without, 23 suffered fractures which for the most part were followed by death, and 19 presented wounds of the head and scalp. Of the soldiers belonging to the second group 5 had simple superficial wounds or scratches or suffered no harm at all.

June 14th.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

NEED FOR SURGICAL INSTRUMENTS IN BELGIUM.

THE information received from the Aide et Protection aux Médecins et Pharmaciens Belges Sinistrés to the effect that a further supply of surgical instruments would be useful in Belgium has now been confirmed by the National Relief Commission, and the British Fund is preparing to send through the offices of that commission a large supply of surgical instruments to Brussels. The response to the invitation to supply instruments, which has appeared at different times in these columns, has been very good, but further heavy demands upon the stock in hand would soon deplete it. We are therefore renewing the public request for instruments which for a time has ceased to appear, owing to the response seeming to meet the needs of the time. Mr. Meredith Townsend, Master of the Society of Apothecaries of London, has personally supervised the packing of a further consignment to Belgium, and all the instruments to be sent are of modern type and have been repaired in every way.

THE WEEK'S SUBSCRIPTIONS.

The week's subscriptions include a further contribution from the North of England Branch Fund, a most energetic body, and a handsome subscription of £168 from New Zealand.

	£	*s.*	*d.*
Salisbury Division, B.M.A. (per Dr. L. S. Luckham)—			
Balance of Private Divisional Fund ...	3	4	7
Mr. H. Browne	1	1	0
Mr. Challoner Clay ...	1	0	0
Dr. E. Winbolt Lewis	1	1	0
Mr. L. D. Saunders ...	1	1	0
Dr. E. F. Fison	1	0	0
Mr. G. W. Whiteley ...	1	1	0
Mr. J. Armitage... ...	0	10	6
Mr. S. Ellis	0	10	6
Mr. J. E. Gordon ...	0	10	6
Mr. W. Gordon	0	10	6
Mr. L. S. Luckham ...	0	10	6
Mr. J. Ogdin March...	0	10	6
Mr. Arthur Longman	0	10	6
Mr. W. Stratton... ...	0	10	6
Mr. C. Stratton	0	10	6
Dr. W. W. Ord	0	10	6
Mr. G. E. Thornton ...	0	10	6
Dr. F. B. Butler... ...	0	10	6
Dr. H. P. Blackmore	0	10	0
Barnsley Division, B.M.A. (per Dr. R. F. Castle) (third donation, total £43 11*s.* 6*d.*)	1	1	0
Medical officers serving in 1st Peshawar Division	12	13	4
Major N. Rainier, I.M.S.	2	2	0
Christchurch, N.Z., anonymous from (per Bank of N.Z.)	168	0	0
"A. K.," Chiengmai ...	2	2	0
North of England Branch Fund (per Dr. James Don and Mr. A. S. Perceval, Hon. Secs.) (fourteenth donation, total £723 14*s.* 7*d.*)—			
Dr. W. Galloway ...	2	2	0
Dr. J. W. Leech	3	3	0
Dr. Thos. Body	1	10	0
Dr. J. P. Elliott	1	1	0
Dr. C. R. Sutherland	1	1	0
Dr. F. O'Neill	1	1	0
Dr. John Anderson ...	18	17	6
Dr. J. W. Geddes ...	0	10	0
Dr. E. M. Swanwick...	1	1	0
Dr. Arthur Gardner ...	1	1	0
Dr. R. Brown	0	10	6
Dr. W. Hall	1	1	0
(Less expenses to date, £18 19*s.* 11*d.*)			
Dr. J. A. Frend, Rosario, Argentina (per Dr. H. Macnaughton-Jones)...	5	5	0
Dr. Fingland	1	1	0

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham-gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Ltd.

THE APPEAL FOR SURGICAL INSTRUMENTS.

The Master of the Society of Apothecaries will receive and acknowledge with thanks any surgical instruments which are sent to the Apothecaries' Hall, Blackfriars, E.C.

DONATIONS AND BEQUESTS.—By will the late Dr. W. T. Edwards, of Cardiff, left £500 each to the Royal Medical College, Epsom, and the Medical Benevolent Fund. In the event of the failure of certain trusts the testator bequeathed £7000 to the University College, South Wales and Monmouthshire, towards the maintenance of the Medical School; £6000 to the King Edward VII. Hospital, Glamorganshire; and £1000 to the Blind Asylum or Workshop, Cardiff.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned have been granted temporary commissions as Surgeons in His Majesty's Fleet: Hother McCormack Hanschell and Arthur Toulmin.

The following appointments have been notified:—Fleet-Surgeons: R. W. Stanistreet to the *Endymion*; S. Conner to the *Theseus*; and E. D. J. O'Malley to the *Maidstone*. Staff-Surgeon: J. Thornhill to the *Victorian*. Temporary Surgeons: W. H. Kay to the *Theseus*; and S. N. Toulmin to the *Endymion*.

ARMY MEDICAL SERVICE.

Colonel Sir B. G. A. Moynihan relinquishes his temporary commission (dated Feb. 28th).

ROYAL ARMY MEDICAL CORPS.

The undermentioned Majors to be temporary Lieutenant-Colonels: William A. Turner, R.A.M.C. (T.) (dated May 26th), and Charters James Symonds, R.A.M.C. (T.) (dated June 1st).

Major Robert H. Mills-Roberts, C.M.G., 6th Battalion, The Royal Welsh Fusiliers, to be temporary Lieutenant-Colonel whilst employed with a Field Ambulance of the 43rd Division (dated Dec. 2nd, 1914).

Theodore Mailler Kendall, late Fleet Surgeon, Australian Navy, to be temporary Major (dated May 17th).

The undermentioned are granted the temporary rank of Major whilst employed at the Welsh Metropolitan War Hospital:—Dated May 1st: Edward Barton Cartwright White. Dated June 2nd: Howard Davidson Harrison and Charles Henry Geoffrey Ramsbottom.

Major Arthur Nimmo Walker, 1st West Lancashire Brigade, Royal Field Artillery, Territorial Force, to be temporary Major (dated May 22nd).

Temporary Captain Edward L. Gowlland, late Major, Royal Garrison Artillery (T.), to be temporary Major (dated June 11th).

The undermentioned to be temporary Captains: Dated May 3rd: Denis Murphy, late Captain, R.A.M.C. (Special Reserve), and Frank Alfred Amphlett Holmden, D.S.O. Dated May 6th: William John Gow. Dated May 7th: Ralph Bodkin 'Mahon. Dated May 14th: Thomas Watts Eden. Dated May 15th: Victor John Blake.

Temporary Lieutenant Percival Wood, late Surgeon-Captain, 3rd Middlesex Royal Garrison Volunteer Artillery, to be temporary Captain (dated June 15th).

Arthur Conyers Inman to be temporary Honorary Lieutenant (dated June 3rd).

The appointment to a temporary Lieutenancy of George H. Wood is antedated to April 13th.

The undermentioned temporary Lieutenants relinquish their commissions:—Dated May 14th: R. F. Ferris. Dated June 1st: James J. Keirans.

Temporary Lieutenant Ernest C. Peake relinquishes his commission on account of ill-health (dated May 21st).

The undermentioned to be temporary Lieutenants:—Dated Nov. 24th, 1914: Walter Amsden. Dated April 24th: Lieutenant James Burgess Woodrow, Canadian Army Medical Corps. Dated May 1st: Conrade Loddges. Dated May 3rd: Alfred Adams, Robert Ferguson Russell, Mark Stewart Fraser, Gerald Holroyde, Dallas Gordon Perry, Thomas Ewart Ashley, William Russell, Francis George Macneill Simpson, Rowland Hamer, Henry Edwardes Griffiths, Richard Walton Long, and Edward Thomas Larkam. Dated May 4th: William Harrison MacKinlay, Cyril Rodney Holtz Crawford, Ernest Camden Pratt, Alic Phillips, Robert James Bonis, Arthur Hamilton Tovey, James Richardson Spensley, Henry Murray Agnew, George Gardner, Andrew Walker Forrest, John Bruce Baird, and John Dorrington Batt. Dated May 5th: Robert Spears, John Frederick Broughton, Wyger Harmens, Guy Nasmith Mottram, and Jocelyn Langton Waller. Dated May 6th: John James Robertson, Charles Broderick Pearson, Hugh Hadfield Carleton, and Stephen Frederick Lynch. Dated May 7th: William Fraser, Ernest Goodwin Rawlinson, Daniel Kelly, Edward John Morton, Edwin Arthur Cleveland Swainson, Cecil Bennett, Charles Samson Thomson, John William Innes, Benjamin Jones, Robert Reid Pirrie, Leo Lane, Donald McFarlane Livingstone, John Wilson McCagie, John Brownlee Milne, Frank Barney Gorton Stableford, Thomas Geoffrey Elsworth, Gerald Sholto Douglas, John Pole Kitson, Patrick Joseph Murphy, Ernest Haines Walker, Mearns Alexander Milne, James Coutts, Anthony John McCreadie, George Miller, Robert MacNab Marshall, Harold Webb, Charles Leslie Grove Powell, James Muirhead, Joseph Bernard Dawson, Herbert Maughan Brown, Augustus Joseph Hickey, Richard Hubert Mercer, Robert Reid Duncan, Noel Instone, Andrew Serjeant McNeil, Ernest Theophilus Roberts, Ronald John Bruce, and Joseph Michael Morrissey. Dated May 8th: Philip Cyril Powter Cloake, George Norman, Charles Putnam Symonds, Archibald Guelph Holdsworth Smart, Henry François Vandermin, Albert William Duncan Coventon, and Ernest George Douglas Pineo. Dated May 9th: Percy Knowles Muspratt. Dated May 10th: Guy Alfred Wyon, Sydney Charles Hillyard Moberley, Denis Gratwicke Halsted, Charles Richard Verling-Brown, Oswin Shields, Henry Yellowlees, John Coffey, Austin Threlfall Nankivell, Richard Henry King, George Pollock, Robert McLaren Wishart, William Wallace Wood, Charles Harold Bloxsome, James Todd Dickson, John Melville Elliot, John Munro Campbell, John Buchanan, D'Arcy Irvine Hamilton, Harold Ernest Pierpoint Yorke, John Miller Young, Kenneth John Aveling, Leopold Ernest Valentine Every-Clayton, George Henry Russell, Sydney Waddell, John Dodds Marshall, Lionel Augustine Joseph Graham, Alexander Bruce Gordon, George Henry Keane, Stanley Victor Percy Pill, James Felton Hammond, William Arthur Anderson, Charles Reidy, John Maxwell Taylor, William Richard Morris, William Patrick Cooney, John Dixon, Frank Radcliffe, Alexander Church Brodie McMurtrie, William Stewart, Harry Tudor Newling, and Howard Ebenezer Collier. Dated May 11th: Harry Lawrence Attwater and Cecil Rutherford. Dated May 12th: George Stoddart, Sidney John Rowntree, James Alexander Wood Watts, Albert Victor Craig, Gordon Wilfred Ritchie Rudkin, Herbert Michael Moran, Clement Kirwan Sylvester, Archibald Ferguson, David Albert Hutcheson, Herbert Bates, Samuel Frederick Holloway, Frank Edward McGee, Edward Irving Pownoll Pellew, William Henry McKinstry, George Amos Varian, Peter Macdonald, William Edward Lindsey Fowler, William Guy Embleton Allen, and Frederick Travinor Rees. Dated May 13th: William James Valentine Curtain, Hugh Arthur Evans, and Howard Stein Millar. Dated May 14th: Percy Hall, Gerald Richard Courtenay Wilson, Richard Hamilton Ashwin, Benjamin Beamish, Alfred Benjamin Bateman, Harry Gordon Leigh Gilchrist, Thomas Mackinlay, William Ross, Arthur Gerald Welsford, William Hastings Hardy, Robert Devereux Mothersole, Colin Charles Gordon Gibson, Norman Gerald Meade, Arthur Daniel Clanchy, Aaron Simeon Cohen, Ignatius Patrick Kelly, Eric Bayley, John Edward Litton Alexander Turnley, John Thomas Armstrong, Berthold Somerville Taylor, and Ronald Tydd Herdman. Dated May 15th: John Hardwick Thornley, Robert Broom, Henry Brown Elton, John Douglas Wilkinson, Sol Cross, Burke Cuppage, Archibald Penrhyn Bowdler, David Thomas Crichton Frew, Alfred John Davoren, Edward Hamilton Bruce Fox, Hight Blundell, Albert Cameron, Andrew Wilson Cochrane, William Ashley Graves Cluffe, Robert Donald, Tom Henry Trevethan Frampton, Francis William Fawssett, James Edgar Hewlett, James McAvoy, Archibald Underwood Millar, Murdo Duncan Mackenzie, Andrew Brown McPherson, Arthur Robert Moore, Thomas McCririck, Willie Oliver, Victor John Ruttledge, Thomas Readman, Francis Riley, Herbert Douglas Smart, Daniel Stewart, David Taylor, William Wilson Wood, Herbert Kidson Wallace, John Wilson, James MacGregor Johnson, John Joseph Pentony, John Newton Martin, Alexander Farquhar, Leonard Owen Weinman, Gilbert Winter Dryland, George Habgood, George Hobson Thompson, Bentley Moore Hunter, Archibald Macmillan, Arthur Henry Thomas, William Francis Blewitt, Frederick George Beatty, Ivon Henry Skipwith Hawes, William Albert Wheeldon, Alfred Whitby, George Wheldale Stanley, and Henry Richard Rigby. Dated May 17th: William Bates, Robert Joseph Weidner, William R. Thomas, James Hamilton Fleming, William Reid, James Alexander MacLaren, William Deane, Alexander Joseph Dempsey, Thomas Bennett, Cecil Lionel Lakin, James William Hutton, Kenneth Gillies, Robert Grant, George William Bennett Waters, James Robert Burn, Burford Noel Norman, Sidney Herbert Booth, Murdo Maclean, Alexander Johnston Wilson, James Joseph Foley, Alfred Robert Sieveking, David Joseph Miller, William Wilson Jameson, John Erwood Forster, Penrose Lanyon Watkin-Williams, Samuel Edgar Martin, Alan Renata Green, Maurice Hereward Cane, Henry John MacKay Adams, Francis James Wheeler, John Carr Osburne, James Maxwell, Horace Bagster Wilson, Edgar James Tyrrell, William Alexander Milne, Joseph Dudley Benjafield, Reginald Power, Frank Davidson Johnson, Albert Ernest Henton, William Robert Honeyburne, William John Gilmour Henderson, Joseph Green, Wilbye Cooper, John Frankland West, Geoffrey Clarke, Lieutenant Alexander Barnett Brook, 4th Battalion, Seaforth Highlanders (Ross-shire Buffs, The Duke of Albany's), Territorial Force. Dated May 18th: John Mandall Coates, David Lawrie, and Cecil William Wilson. Dated May 19th: John Miles Chambers, Robert Hamilton, Herbert Walker Binks, William Doyle, John Anderson, Stanley Batchelor, Alfred Hollier Clough, George John Fraser, Harold Stanley Groves, Lancelot Raoul Lempriere, Robert McLean, George McNeill, Thomas Stanley Rippon, Noel Florentine Rowstron, Algernon Verling, Alexander Sweet Wilson, William

Frederick Rhodes, Norman Tattersall, William Leitrim Clements, Frederick Ernest Chapman, Trevor Hayman Fowler, and Giulio Hamilton.

The undermentioned officers of the Canadian Army Medical Corps to be Temporary Lieutenants: Dated May 10th: Major Norman King Wilson; Captains John Vassie Brown, Robert Werden Tennent, and John Jordon Field; and Lieutenants William Samuel Pickup, William James Morden Marcy, Frank Muir Walker, Herbert Wilfred Kerfoot, John George McLeod, Ernest Victor Frederick, Alfred Hope Macklin, Albert Franklin Mavety. Richard Earl Horkins, George Norman Uric, Ross Lester Shields, John Joseph Middleton, John LeKoy Mavety, James Willis Sutherland, Joseph Austin Evans, Murray Hulme Paterson, Frederick Johnson Livingston, George Chambers Anglin, John Nelson Humphrey, Keith Myrie Benoit Simon, James Franklin McLay, Richard Henry Bonnycastle, Lionel Montrose Dawson, Warren Augustus Dakin, James Edward Knox, Oswald John Day, Kenneth George McKenzie, Victor Howard McWilliams, Frederick James Colling, Henry Crassweller, Oliver William Colbeck, Frank Howard Wheeler, John Harold White, George Walker Manning Smith, Archibald Henderson, Thomas Oswald Hutton, and Charles Goldie Sutherland.

The undermentioned non-commissioned officers and men of the Canadian Army Medical Corps to be temporary Lieutenants:—Dated May 27th: Staff-Sergeants William James Deadman and Samuel Alexander Overend, Sergeants Leeming Anderson Carr and Frank Whiting Overholt, Lance-Corporal John Thomas Courtice, Privates John Chassels and Harry Arthur Cates. Dated May 28th: Staff-Sergeants Duncan Archie Fletcher, George Murray Shaw, and Charles Lennox Tulloch Arthur, Corporal John Victor Williams, Privates Halstead Graime Murray, Charles Havelock MacLean, Harry Adolph Sharman, Wellington Lekoy Pedlow, Otto Van Luven, and Ernest John de Beaupré. Dated May 29th: Sergeant-Major Alfred Clarence Brisco. Dated May 31st: Sergeant Major Walter James Bolt Brown, Sergeant John Francis Ryan, Corporals George Beatty Burwell and Everett Franklin Garfield Ward, Privates Frederick Walter Diamond, David Archibald Macfarlane, Hector McKenzie, Kenneth Earl Millan, Joseph Stokes Stewart, Norman Michael Glace, George Sampson Cronk, John Henry Fisher, Warren Fullerton Clark, John Howard Box, Arthur George Howson, Kenneth Lorne Mackinnon, and Harry Love Jarman.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant Thomas McEwen to be Captain.

The undermentioned Lieutenants (on probation) are confirmed in their rank: Robert McKinlay, Douglas Cran, John O. Reid, William B. Postlethwaite, Patrick C. MacRae, Robert P. S. Mason, Gilbert W. Rose, Neville H. Linzee, Frederick E. Fielden, William B. Cathcart, Raymond F. Pinson, Austin B. Clarke, Alfred T. Logan, James G. Wilson, and John F. Lyons.

TERRITORIAL FORCE.

Army Medical Service.

Major William Cochrane Murray, from 1st Lowland Field Ambulance, to be Deputy Assistant Director of Medical Services, Lowland (Reserve) Division.

Royal Army Medical Corps.

2nd East Anglian Field Ambulance: Lieutenant Frederick G. Sharpe resigns his commission on account of ill health.

3rd Home Counties Field Ambulance: Michael Arthur Curry to be Lieutenant.

South-Eastern Mounted Brigade Field Ambulance: Cholmondeley Webb to be Lieutenant.

2nd West Lancashire Field Ambulance: James Pearson Thierens to be Lieutenant.

2nd Northern General Hospital: James Blacklay Lockerbie to be Captain, whose services will be available on mobilisation.

1st Western General Hospital: Thomas Porter McMurray to be Captain, whose services will be available on mobilisation.

2nd Western General Hospital: Howard Buck to be Captain, whose services will be available on mobilisation. Edward Albert Williams to be Lieutenant.

1st Highland Field Ambulance: Captain Peter Howie to be temporary Major.

5th London Field Ambulance: Captain John Herbert Dixon to be temporary Major.

1st Northumbrian Field Ambulance: Edward Turton (late Captain, 5th (Cyclist) Battalion, The East Yorkshire Regiment), to be Major (temporary).

4th Southern General Hospital: Francis Edward Price to be Captain, whose services will be available on mobilisation.

1st South Midland Mounted Brigade Field Ambulance: Frank Smith to be Lieutenant.

1st Highland Field Ambulance: John Miller Chrystie to be Lieutenant.

3rd West Lancashire Field Ambulance: Bertram Whewell Hogarth (late Major, 5th Battalion, The King's Own (Royal Lancaster Regiment)) to be Major (temporary).

3rd Scottish General Hospital: David Watson to be Captain, whose services will be available on mobilisation.

5th Southern General Hospital: Captain John H. P. Fraser is seconded.

Notts and Derby Mounted Brigade Field Ambulance: Guy Witton Miller to be Lieutenant.

Yorkshire Mounted Brigade Field Ambulance: Charles Graham Meade to be Lieutenant.

1st London (City of London) Field Ambulance: Captain Thomas S. Worboys, from Attached to Units other than Medical Units, to be Captain (temporary). Captain Donald S. Sutherland, from Attached to Units other than Medical Units, to be Captain (temporary).

1st West Riding Field Ambulance: Charles Suffield Brown to be Lieutenant.

2nd West Riding Field Ambulance: Alexander Anderson to be Lieutenant.

3rd West Riding Field Ambulance: William Sneddon to be Lieutenant.

2nd London General Hospital: Captain Maynard Horne is seconded.

1st Northern General Hospital: William Arthur Slater (late Cadet, Durham University Contingent, Senior Division, Officers Training Corps), to be Lieutenant.

1st Scottish General Hospital: Clifford Thiselton Bell to be Captain, whose services will be available on mobilisation. Robert Richards to be Captain, whose services will be available on mobilisation.

1st Southern General Hospital: Thomas Wilson to be Captain, whose services will be available on mobilisation.

2nd London Sanitary Company: To be Lieutenants: James Mair and Alfred Carlton Williams.

Highland Casualty Clearing Station: James McLean Macfarlane to be Lieutenant.

2nd London Casualty Clearing Station: Andrew Tynan Swan to be Lieutenant.

Welsh Casualty Clearing Station: Major Charles R. White, from 2nd Welsh Field Ambulance, to be Lieutenant-Colonel (temporary). Captain Patrick J. McGinn, from 1st Welsh Field Ambulance, to be Captain. The undermentioned to be Lieutenants: Lieutenant John J. E. Biggs and Lieutenant Charles Nyhan, from Attached to Units other than Medical Units, and John Anderson.

Attached to Units other than Medical Units.—To be Majors: Surgeon-Captain James W. Cook, from 5th Battalion, The Lancashire Fusiliers, Captain John Leach, Palemon Best (late Captain, Cornwall (Duke of Cornwall's) Royal Garrison Artillery), and Captain Richard T. Turner. Captain George C. Jeaffreson resigns his commission on account of ill-health. Edmund Percival Isaacs Coke (late Captain, R.A.M.C., Territorial Force) to be Captain (temporary). To be Lieutenants: Charles Cooper Ling, John Wood, and John Ernest Ransford. Captain Lawrence C. V. Hardwicke is restored to the establishment.

DEATHS IN THE SERVICES.

Major Arthur Tregelles Pridham, I.M.S., suddenly, on June 6th. He joined the service in 1902, and in 1911–12 took part in operations in the Abor country (medal with clasp).

Surgeon-General Thomas Grainger, C.B., I.M.S., has been appointed an Honorary Surgeon to the King, vice Surgeon-General G. F. A. Harris, C.S.I., retired.

THE NATIONAL CARE OF MATERNITY.—On June 11th a deputation from the Women's Coöperative Guild waited on Mr. Walter Long, President of the Local Government Board, to urge immediate legislation dealing with the care of maternity and infancy. Mr. Long said that he would be glad to introduce legislation making the Notification of Births Act compulsory all over the country.

THE LATE DR. J. P. CAMERON.—The death of Dr. J. P. Cameron is announced as having taken place on Savage Island on March 13th, where he was medical officer under the New Zealand Government. Dr. Cameron, who was 29 years old, was a Scotsman, and was educated at Aberdeen University, where he graduated as M.B., C.M. in 1910.

NEW BUILDINGS AT THE DURHAM COUNTY HOSPITAL.—On June 12th a new operating theatre and a nurses' hostel were opened in connexion with the Durham County Hospital by the Earl of Durham. Only £560 of the £5320 which the buildings have cost remain to be raised, the Ven. Archdeacon Watkins and his wife having given £1000 towards the theatre, and Miss Margaret Brown, of Durham, having made herself responsible for the hostel.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8049 births and 4697 deaths were registered during the week ended Saturday, June 12th. The annual rate of mortality, which had been 15·4, 13·7, and 13·9 per 1000 in the three preceding weeks, fell in the week under notice to 13·5 per 1000 of their aggregate population, estimated at 18,136,180 persons at the middle of last year. During the first ten weeks of the current quarter the mean annual death-rate in these towns averaged 16·0, against a corresponding rate of 16·3 per 1000 in the metropolis. The annual death-rate last week ranged from 4·4 in Hastings, 6·6 in Eastbourne, 6·8 in Enfield, 7·0 in Hornsey, and 7·6 in Newport (Mon.), to 20·1 in Blackpool, 21·1 in Bury, 23·5 in Cambridge, 24·3 in Middlesbrough, and 29·1 in Gillingham.

The 4697 deaths from all causes were 150 fewer than the number in the previous week, and included 449 which were referred to the principal epidemic diseases, against 439 and 489 in the two preceding weeks. Of these 449 deaths, 215 resulted from measles, 90 from infantile diarrhœal diseases, 75 from whooping-cough, 33 from diphtheria, 29 from scarlet fever, and 7 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·3, or 0·1 per 1000 less than in the previous week. The deaths attributed to measles, which had been 309, 221, and 239, in the three preceding weeks, fell to 215 last week, and caused the highest annual death-rates of 2·3 in Wigan, 2·4 in Sunderland, 2·5 in Derby, 3·3 in Sheffield, 4·5 in West Bromwich, and 6·2 in Middlesbrough. The deaths of infants (under 2 years) referred to diarrhœa and enteritis, which had been 70, 64, and 75 in the three preceding weeks, further rose to 90 last week, and included 21 in London, 6 each in Liverpool and Manchester, and 4 each in West Ham and Birmingham. The fatal cases of whooping-cough, which had been 137, 90, and 90 in the three preceding weeks, further fell to 75 last week, of which 16 belonged to London and 4 each to Liverpool, Wigan, Manchester, Leeds, and Sheffield. The deaths attributed to diphtheria, which had been 51, 31, and 50 in the three preceding weeks, fell to 33 last week, and included 9 in London, and 2 each in Birkenhead, Liverpool, Bradford, and Sheffield. The deaths referred to scarlet fever, which had been 20, 21, and 22 in the three preceding weeks, further rose to 29 last week, of which 5 were registered in London, 3 each in Bradford and Sheffield, and 2 each in Tottenham, Liverpool, Manchester, and Salford. The fatal cases of enteric fever, which had been 15, 11, and 13 in the three preceding weeks, fell to 7 last week, of which 3 occurred in Manchester.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2286, 2252, and 2267 at the end of the three preceding weeks, had increased to 2336 on Saturday last; 330 new cases were admitted during the week, against 320, 257, and 327 in the three preceding weeks. These hospitals also contained on Saturday last 1058 cases of diphtheria, 91 of measles, 49 of enteric fever, 12 of whooping-cough, and 1 of small-pox. The 1103 deaths from all causes in London were 48 fewer than the number in the previous week, and corresponded to an annual death-rate of 12·7 per 1000. The deaths referred to diseases of the respiratory system, which had steadily declined from 469 to 181 in the eight preceding weeks, further fell to 165 last week, but were 22 in excess of the number in the corresponding week of last year.

Of the 4697 deaths from all causes in the 96 towns, 279 resulted from different forms of violence, and 401 were the subject of coroners' inquests, while 1394 occurred in public institutions. The causes of 34, or 0·7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Manchester, Sheffield, Bristol, Bradford, Hull, and in 57 other smaller towns. Of the 34 uncertified causes, 9 were registered in Birmingham, 3 in Liverpool, and 2 each in Gillingham, St. Helens, Preston, South Shields, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns, with an aggregate population estimated at 2,345,500 persons at the middle of this year, 1123 births and 806 deaths were registered during the week ended Saturday, June 12th. The annual rate of mortality in these towns, which had been 16·1, 18·2, and 18·9 per 1000 in the three preceding weeks, fell to 17·9 per 1000 in the week under notice. During the first ten weeks of the current quarter the mean annual death-rate in these towns averaged 18·8, against 16·0 per 1000 in the large English towns. Among the several towns the death-rate last week ranged from 7·1 in Kilmarnock, 10·0 in Motherwell, and 12·4 in Ayr, to 20·9 in Dundee, 22·0 in Leith, and 23·7 in Aberdeen.

The 806 deaths from all causes were 42 fewer than in the previous week, and included 148 which were referred to the principal epidemic diseases, against numbers increasing from 90 to 147 in the three preceding weeks. Of these 148 deaths, 80 resulted from measles, 40 from whooping-cough, 12 each from scarlet fever and infantile diarrhœal diseases, and 4 from diphtheria, but not one from enteric fever or from small-pox. The mean annual death-rate from these diseases was equal to 3·3, against 1·3 per 1000 in the large English towns. The deaths attributed to measles, which had been 36, 72, and 85 in the three preceding weeks, fell to 80 last week, and included 52 in Glasgow, 17 in Aberdeen, and 3 in Edinburgh. The deaths referred to whooping-cough, which had been 40, 43, and 40 in the three preceding weeks, were again 40 last week, of which 23 occurred in Glasgow, 5 in Edinburgh, and 3 in Dundee. The fatal cases of scarlet fever, which had been 6, 5, and 7 in the three preceding weeks, further rose to 12 last week, and comprised 6 in Glasgow, and 3 each in Edinburgh and Aberdeen. The deaths of infants (under 2 years), attributed to diarrhœa and enteritis, which had been 5, 15, and 10 in the three preceding weeks, rose to 12 last week, and included 5 in Glasgow, 3 in Dundee, and 2 in Aberdeen. The 4 fatal cases of diphtheria were 4 below the average in the earlier weeks of the quarter, and were all registered in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 117, 141, and 145 in the three preceding weeks, fell to 126 in the week under notice, but were 31 in excess of the number registered in the corresponding week of last year. The deaths attributed to different forms of violence numbered 25, against 26 and 35 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,212,380 persons at the middle of this year, 536 births and 357 deaths were registered during the week ended Saturday, June 12th. The annual rate of mortality in these towns, which had been 18·3, 16·4, and 17·0 per 1000 in the three preceding weeks, fell to 15·4 per 1000 in the week under notice. During the first ten weeks of the current quarter the mean annual death-rate in these towns averaged 19·3, against corresponding rates of 16·0 and 18·8 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 17·0 in Dublin (against 12·7 in London and 19·1 in Glasgow), 13·7 in Belfast, 15·6 in Cork, 21·5 in Londonderry, 19·0 in Limerick, and 11·4 in Waterford, while in the 21 smaller towns the mean rate was 14·0 per 1000.

The 357 deaths from all causes were 39 fewer than the number in the previous week, and included 21 which were referred to the principal epidemic diseases, against 20 and 27 in the two preceding weeks. Of these 21 deaths, 9 resulted from whooping-cough, 7 from measles, 2 each from diphtheria and infantile diarrhœal diseases, and 1 from scarlet fever, but not one from enteric fever or from small-pox. The mean annual death-rate from these diseases was equal to 0·9, against corresponding rates of 1·3 and 3·3 per 1000 in the English and Scotch towns respectively. The deaths attributed to whooping-cough, which had been 5, 3, and 5 in the three preceding weeks, further rose to 9 last week, and included 3 in Londonderry, and 2 each in Dublin and Cork. The deaths referred to measles, which had been 9, 10, and 3 in the three preceding weeks, rose to 7 last week, of which 5 occurred in Belfast. The 2 deaths from diphtheria were registered in Dublin, those from infantile diarrhœa in Belfast and Queenstown, and the fatal case of scarlet fever in Belfast.

The deaths referred to diseases of the respiratory system, which had been 93, 63, and 56 in the three preceding weeks, rose to 64 in the week under notice. Of the 357 deaths from all causes, 107, or 30 per cent., occurred in public institutions, and 3 resulted from different forms of violence. The causes of 8, or 2·2 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 English towns the proportion of uncertified causes did not exceed 0·7 per cent.

A FREE TUBERCULOSIS DISPENSARY AT ST. BARTHOLOMEW'S HOSPITAL.—A dispensary has been established at St. Bartholomew's Hospital, at which residents in the City or non-resident workers suffering from any form of tuberculosis may receive advice and treatment free. The dispensary, which is the outcome of an arrangement between the City Corporation and the hospital, is open between the hours of 12.30 and 2.30 P.M. on Tuesdays and Fridays Special cases receive attention on Thursday evenings.

Correspondence.

"Audi alteram partem."

TYPHUS FEVER, LICE, AND THE WAR: A SUGGESTIVE FACT.

To the Editor of THE LANCET.

SIR,—In the annotation in your issue of June 12th entitled "The Spread of Typhus Fever by Lice," you mention a circular issued by the German Imperial Board of Health which advocates the use of a preparation containing sabadilla vinegar. This at once recalled to my mind a statement contained in a letter which I received in January last from Mr. James Flind, the administrator of the La Guaira and Caracas Railway, Venezuela. He told me that during the year 1913 no less than 258 tons of sabadilla seed were shipped from La Guaira to Germany, the shipment in former years averaging something over 100 tons per annum. He says, further, "Owing to the war, the sabadilla is now being shipped, but in smaller quantities, to the United States, and we have never shipped any of it to England. The uses for this seed are not fully known here, but it is thought that it is used in the curing of hides and as a medicine for horses and animals." In the light of your note it would certainly seem that we have here additional proof, if any were needed, that Germany had carefully prepared for the war which she intended to bring about as soon as it suited her convenience.

The most important active principle of sabadilla is, of course, veratrine, which is used to some extent in veterinary practice as a parasiticide, and also enters into the composition of a preparation sometimes employed for treating pediculosis of the scalp.

It must be remembered that veratrine is a very poisonous substance, and preparations containing it must be used with caution. Doubtless the German Imperial Board of Health pay due attention to this point in their circular.

I am, Sir, yours faithfully,
ANDREW BALFOUR.

Wellcome Bureau of Scientific Research, London, W.,
June 14th, 1915.

THE INCIDENCE OF PLAGUE IN EUROPE.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Nov. 14th, 1914, I put forward some contentions with regard to the incidence of plague in Europe. I attempted to explain why it is that whereas formerly great epidemics were rife, nowadays no such occurrences take place.

First, I endeavoured to establish the fact that the brown rat having replaced the black was to a large extent the reason for the changed condition of affairs. The disappearance of plague was coincident with the introduction of the brown rat; and in the seaport towns where the black rat is still largely prevalent small epidemics do occur.

Secondly, I tried to find an explanation of this, and I concluded that the reason was to be found in the different bionomics of the two species of rat.

Thirdly, I tried to show that whatever danger there was to man from epizootics among brown rats, the danger was much minimised in the summer months. I gave certain figures in support of this, and I concluded that the reason for what I took to be a fact was that the rats, being widely dispersed over the countryside in summer, were, *pari passu* with that dispersal, less exposed to infection, and therefore to epizootics.

Now Dr. R. St. J. Brooks, writing in THE LANCET of Dec. 19th, 1914 (which has just come to my hand in a corner of Malaya, May 4th, 1915), challenges the figures by which I tried to prove that rats were less liable to epizootics in the summer. He says that, as a matter of fact, an average flea-rate per rat of 2·7 produced an epizootic of 11 per cent. in one parish in England (I said that a flea-rate of 1 per rat had done so, having misinterpreted Martin and Rowland's original paper, or not seen the figure that Dr. Brooks gives); and not only does he say that I was wrong in that, but that I had compared my figures for that parish with something that was not strictly comparable—to wit, the incidence of plague among 15,000 rats, which had a flea-rate of 4·5, caught later in a great many parishes.

I do not know why these figures are not comparable. I contend that if a flea-rate of 2·7 (admitting the new figure) causes an epizootic of 11 per cent. among 123 rats in a town, village, or hamlet, then a flea-rate of 4·5 should cause a much greater epizootic than 0·2 per cent. among any 15,000 rats one likes to examine. Of course, it is possible if 15,000 more rats had been examined a heavy infection would have been found among them (this is only admitting that there is an "error of random sampling"); all I am concerned with is the fact that among 15,000 rats which were examined, with an average of 4·5 fleas per rat, there was no heavy infection, and I want to know the reason why.

As a matter of fact, if Dr. Brooks still does not consider these figures comparable I will give him some parish for parish figures.

—	Parish.	Plague.	Flea-rate.
Martin and Rowland (Winter, 1910).	?	11% epizootic.	2·7
Strickland and Merriman (Summer, 1911).	Nacton.	Nil.	6·5
	Tuddenham.	,,	6·0
	Tattingstone.	,,	5·3
	Hollesley.	,,	5·1

The difference in these figures for neighbouring parishes all in the infected area for winter and summer is striking and needs some explanation, and I think I have hit on the right and natural one when I say it is due to the dispersal of the rats over the country-side in summer.

Dr. Brooks finally says my "assumption is erroneous." It is not quite clear from his letter whether he refers only to the last or to all three of my contentions. The reader is rather led to infer that one of my figures having been given wrongly the whole thesis was upset. As a matter of fact, his criticism was directed only against my third contention, and I think I have shown that it was captious and inconsequent. After all, if Dr. Brooks admits the dispersal of the rat population in the summer time, would he not expect a lessened incidence of plague among them? Even if Dr. Brooks will not admit the lessened incidence of plague in summer as compared with winter, will he not make it clear whether, while recognising the lessened incidence of plague nowadays as compared with the past, he disputes my first two contentions: (1) that it has been due to the replacement of the black rat by the brown;

and (2) that the reason for this is found in the difference of bionomics in the two species of rat?

Until Dr. Brooks sets up some thesis more reasonable than that of my three contentions I hold that mine may stand.

I am, Sir, yours faithfully,

C. STRICKLAND,
Travelling Medical Entomologist, Federated Malay States Government.
Malaria Bureau, Kuala Lumpur, F.M.S., May 5th, 1915.

DIAGNOSIS OF TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—The article by Dr. G. H. Dart on this subject in THE LANCET of June 12th must have been of great interest to all those who are doing tuberculosis work, and who are, in consequence, examining numbers of contacts daily. I think one and all will agree with Dr. Dart with regard to the great difficulty in many cases of making a definite diagnosis, especially so in childhood, at the first examination. I have a special opportunity of watching these difficult and anomalous cases at the Kensal House Open-air School, which is under my medical supervision, and to which this particular class of case is admissible.

It seems to me, from a clinician's standpoint, almost impossible to lay down any hard-and-fast rules with regard to symptoms, physical signs, or special tests (such as Moro's, von Pirquet, &c.), as to which case should be classed as "definite" and which "suspect," as there are never two cases exactly alike; consequently each case must be judged, so to speak, on its own merits. Then, again, in many cases the final diagnosis can only be made after having had the child under observation in an open-air school or some such institution for some considerable time.

It is obvious that no scheme for dealing with tuberculosis can be complete without an open-air school.—I am, Sir, yours faithfully,

R. SEPTIMUS WALKER,
Medical Officer, Paddington Tuberculosis Dispensary.
June 15th, 1915.

PULSUS ALTERNANS.

To the Editor of THE LANCET.

SIR,—Dr. J. Davenport Windle's comments in THE LANCET of June 12th on one of the tracings attached to my paper on pulsus alternans, which appeared in your issue of May 29th, are of very considerable interest, and, as I well know, the subject is one on which he speaks with special authority. Nevertheless, I think I can assure him that the tracing was not produced in the way he suggests. The patient was not the subject of laboured breathing, and in whatever position she was placed a tracing some 12 or 14 inches in length exhibited throughout the perfectly regular alternation which is displayed in the short example. Perhaps it may be well to add that the tracing was taken not through the agency of a tambour, but directly by Dudgeon's sphygmograph. Dr. Windle's second point is of great importance, as it proposes a method of distinguishing between a pulsus alternans which is of serious import and one which is free from anxious significance. But is he not a little severe in challenging my tracing as a true picture of pulsus alternans because of the absence of a feature which, as he himself says, has not hitherto been mentioned as one of the characteristics of this condition? If the tracing conforms to the recognised descriptions it may surely claim the corresponding title, though the new test proposed by Dr. Windle may be a possible method of appraising its exact prognostic significance. The measurements on which he insists must obviously receive the attention of all who are interested in graphic methods, and on this particular issue it would be of interest to have his opinion on my Fig. 1 (*a*) where the downstroke of the weaker beat is definitely shorter than that of the stronger. This tracing would therefore seem to satisfy the new condition which he presents as essential to a true pulsus alternans. But both Fig. 1 (*a*) and Fig. 6 (*a*) are tracings taken from one and the same patient.

May I be allowed a word in recognition of Sir James Goodhart's interesting letter in your issue of June 5th? The question he raises of the relative values of sphygmometric and sphygmographic records does not seem to have engaged the attention it merits. In THE LANCET of Feb. 18th, 1911, I tried to show that the sphygmometer can at the best relate only to level or height of pressure, while for information relative to the duration of pressure and to the fashion of its decline an appeal must be made to the sphygmograph. On the other hand, at least such was my claim, the sphygmograph makes no announcement of the height to which the pressure rises, and therefore the terms "high pressure" and "low pressure," as commonly applied to its readings, are unjustified and misleading. I am, Sir, yours faithfully,

June 14th, 1915. C. O. HAWTHORNE.

THE GRATUITOUS TREATMENT OF DEPENDENTS.

To the Editor of THE LANCET.

SIR,—I was glad to see the letter of "M.D." in THE LANCET last week. At the beginning of the war, when this was proposed, no one realised what the nation was in for, and the suggestion was quite fitting and proper. Now that the matter has grown to such dimensions it is becoming a burden. The whole service should be properly arranged with fitting remuneration. As it is, half my patients now come under this category, and soon some of us on whom an unfair share of this work happens to fall will find themselves unable to continue. Other State work is remunerated, why not this?

I am, Sir, yours faithfully,

June 14th, 1915. SATIS.

⁂ By the same post a letter from a correspondent in Vancouver reaches us saying: "At the commencement of the war the Medical Society of Victoria, British Columbia, decided that wives and children of soldiers on active service should be attended gratuitously, but owing to great abuse of the members' services that resolution has now been rescinded."—ED. L.

LITERARY INTELLIGENCE.—Messrs. Henry Frowde and Hodder and Stoughton announce the publication within the next few weeks of a series of Oxford War Primers of Medicine and Surgery, to be written mainly by medical officers in the naval and military services who have had special experience of the subjects. The series will be issued under the general editorship of Lieutenant-Colonel D'Arcy Power, R.A.M.C.(T.).

DEATH OF AN ABERDEEN MEDICAL MAN.—Dr. J. E. Fowler, a well-known medical practitioner in the Woodside district of Aberdeen, died on June 11th in the seventy-sixth year of his age. The whole of his professional life had been spent in the district where he lived, and he took a keen interest in public affairs. When Woodside was a separate burgh he held the office of Provost.

The War.

THE CASUALTY LIST.

THE names of the following medical officers have appeared in the casualty lists since our last issue:—

Killed: Second Lieutenant A. Clifford Clifford, 3rd Dragoon Guards, was a Guy's man and M.B. Cantab.; Lieutenant-Colonel J. W. Jessop, 4th Battalion Leicestershire Regiment (T.F.), of Horncastle, Lincolnshire, was also a medical man (M.R.C.S., L.R.C.P.).

Died of wounds: Surgeon T. L. G. Stewart, R.N.; Lieutenant D. G. Watson, R.A.M.C.

Wounded: Captain R. M. Dickson, R.A.M.C., Major G. H. L. Hammerton, Yorks Mounted Brigade F.A. (T.F.), Captain H. L. Gregory, attached 7th Middlesex Regiment (T.F.), Lieutenant G. Bailey, 1st East Lancashire F.A. (T.F.), Major T. Holt, attached 6th Lancashire Fusiliers (T.F.), Captain H. Henry, attached 4th East Lancashire Regiment (T.F.), all of the R.A.M.C. (T.F.); Surgeon R. Creasy, Divisional F.A., and Surgeon W. Bradbury, Medical Unit, both of the R.N.; Captain R. Knowles, I.M.S., Lieutenant-Colonel W. R. Pearless, N.Z. Army Medical Corps.

DEATHS AMONG THE SONS OF MEDICAL MEN.

The following must be added to the sons of medical men who have fallen in the war: Second Lieutenant G. F. Blacker, only son of Dr. A. E. Blacker, of Clifton; Lieutenant-Commander R. S. Parsons, R.N., fifth son of Dr. Charles Parsons, of Tunbridge Wells; Second Lieutenant T. A. Heywood, only son of Dr. T. W. Heywood, of Darwen; Major E. L. Baddeley, eldest son of the late Dr. Baddeley, of Whalley; Lieutenant W. A. Leland, eldest son of Dr. Alfred Leland, of Kensington; Lieutenant E. F. Thorburn, youngest and only surviving son of Professor William Thorburn, of Manchester; Second Lieutenant A. J. I. Donald, eldest son of Dr. Archibald Donald, of Manchester.

THE BRITISH CASUALTIES.

Mr. Asquith has now given to the House of Commons statistics regarding the casualties amongst officers and men of the Royal Navy, Royal Marines, and Royal Naval Division to May 31st. The figures include the casualties resulting from the loss of the *Bulwark* and other accidental losses. The figures are as follows:—

	Officers.	Men.
Killed	549	7,696
Wounded	181	2,262
Missing	74	2,785
Total	804	12,743

This makes the total of casualties in the Senior Service of all ranks 13,547.

In the House of Commons on June 9th Mr. Asquith stated that our total casualties in the French and Mediterranean Expeditionary Forces up to the end of May (i.e., for ten months) amounted to 10,955 officers and 247,114 non-commissioned officers and men, killed, wounded, and missing, the figures not including the losses among the naval forces, that is, not including the figures given above. Of the total losses in the army the killed numbered 3327 officers and 47,015 non-commissioned officers and men. In no previous war of which we have accurate statistical records has there been so great a loss of life in a similar period of time, and the figures dealing with the army can be submitted to certain rough comparisons.

Throughout the Crimean campaign the British losses were 2755 killed and 12,094 wounded; and our Allies lost 8250 killed and had 39,868 wounded. In the Franco-German War of 1870–71, during the whole period from July to April, the Germans had 17,570 killed and 96,189 wounded. In the Russo-Turkish War of 1877 the Russians lost 32,780 killed and had 71,268 wounded. In the South African War there were 5256 killed in action and 26,286 wounded. In the absence of authoritative statistics as to the numbers of men engaged, it is impossible to compare the relative losses by wounds and by death in the present campaign with previous experiences. At Waterloo the British killed in action amounted to 4·85 per cent. of the troops engaged; the wounded were 16·25 and the missing 2·19 per cent. In the Crimea our losses were 2·81 per cent. killed and 12·35 per cent. wounded. In the Franco-German War the German troops lost 1·97 per cent. killed and 10·83 per cent. by wounds. In the South African War we lost 1·25 per cent. of the force in battle and 2·46 per cent. by disease.

In an attempt to compare the conditions of the present campaign with those of previous wars, in regard to the amount of injury done by one force to the other, the points that must seem the most noticeable are the immense number of combatants, the great extent of the battle lines, the continuous character of the fighting, and the use by each side of arms of great precision, both small arms and artillery. Never before has there been such a concurrence of factors towards the production of an enormous loss of life and limb, and in these circumstances there is little in past precedent to guide us in making any estimates or deductions. We can, certainly, compare the relative proportions of the killed and wounded (including in the latter category the missing, who may be killed or may be prisoners) in the present war with the proportions that have prevailed in the past, and the figures are of better omen than would be expected. The ratio is as 1 killed to 4·25 wounded and missing, or 23·5 per cent. In the Crimea the ratio of killed to the number wounded and missing was as 1 to 4·4, or 22·7 per cent.; in the Franco-German War of 1870 it was as 1 to 5·70, or 17·53 per cent.; in the Russo-Turkish War it was as 1 to 2·17, or 45·98 per cent.; in South Africa it was as 1 to 5, or 20 per cent. The proportion of killed to wounded has therefore so far been similar to, but slightly in excess of, our experiences in the Crimea and South Africa.

Among officers, the proportion of killed to wounded has been in the present war much higher than in the case of the men—namely, as 1 to 2·3, or 43·61 per cent.; it forms our main anxiety. It is said, we do not know with what degree of truth or how widely it is applicable, that our opponents are not led into battle, but that their officers exhort them from the rear rank, and indeed sometimes have to apply some force to make their men advance. This may be mere gossip, or arguing from the particular to the general, and what has certainly taken place in some areas of fighting in the German ranks may have been assumed to be occurring universally. At any rate, there neither is, nor ever has been, any doubt that the British officer (in the words of the drill book) "will lead his company in the assault"; he takes a greater risk, but he knows his men are with him.

TEMPORARY MEDICAL COMMISSIONS AND COMPENSATION.

A medical correspondent asks us whether any arrangements are made, either by the Government, the insurance companies, or the medical profession, to give compensation to any medical man who may either be killed or suffer the loss of a limb or other organ in the war. The gentleman in question had been passed for life assurance by a leading company, but when they learnt that he had applied for a temporary commission in the R.A.M.C. they declined the risk absolutely. As we have had many similar queries, it seems likely that a general statement will be of widespread service. So far as the medical profession is concerned no provision for the granting of such compensation has been made.

As to insurance offices, it is a purely individual matter between the individual candidate and the individual insurance company. It seems quite likely that while perhaps some arrangement could be arrived at between old policy-holders and their company, insurance offices would for the most part decline to take new proposals from those who contemplate going to the front. In any case there would probably be additional premiums for war risk.

With regard to the Government, we are informed by the military authorities that officers (under the rank of colonel) of the Special Reserve of Officers, the Territorial Forces, and those holding only temporary commissions for the purposes of the present war, all stand on exactly the same footing as officers of the Regular Army with regard to compensation for themselves in case of wounds, disease, injury, or disablement consequent on duty, and pensions and compassionate allowances for their families and dependents in case of death. What these gratuities, pensions, and compassionate allowances are under varying conditions and for different ranks in the service can be learnt from the Royal Warrant for Pay, Appointment, Promotion, and Non-effective Pay in the Army, 1914 (Sections X. and XI., Paras. 639 to 680), to be obtained, price 6*d*., either directly or through any bookseller, from Wyman and Sons, Limited, London and Cardiff; H.M. Stationery Office, Edinburgh; and E. Ponsonby, Limited, Dublin.

WAR SERVICE AND THE BRIGHTON MEDICAL PROFESSION.

The Brighton Division of the British Medical Association has adopted the following scheme for assisting medical men who are rendering medical war service. A copy of the scheme has been sent to all practitioners in the area, who are invited to sign the following declaration and return it to Mr. E. Burchell, the honorary secretary:—

> I am willing, during the conditions of emergency caused by the war, to attend, on the terms and conditions formulated below, the patients of other practitioners in this district who are engaged on military duties. I will not attend on my own behalf any patient of a practitioner for whom I have acted under this agreement within one year from the termination of that practitioner's military duties. I agree to accept half of all fees earned as payment for the services I render, or, in the cases of insured persons, a portion of half the quarterly cheque received from the Insurance Committee, which shall be determined by the number of insured persons attended by me during that quarter. If I wish to withdraw from this undertaking, I will give the Hon. Sec. of the Executive Committee, Brighton Division, B.M.A., not less than 14 days' notice. I am willing to undertake: (1) Private practice; (2) practice under the Insurance Act; (3) Poor-law practice. (4) Although unable to undertake work in any of the kinds of practice enumerated, I agree to be bound by the principles of the scheme. [The signatory deletes those kinds of practice he is not willing to undertake.]

From the signatures to this undertaking a list of all practitioners willing to attend patients of absentees on war service is drawn up, and any practitioner leaving on military service may select by agreement with them any or all of the practitioners on the list to attend his patients, it being understood, of course, that only those willing to attend Insurance Act or Poor-law patients shall be called upon to do so. A circular letter, of which the following is the approved form, is sent to all the patients whose names have been on the books of the doctor for the previous two years and who, there is no reason to suppose, have since become patients of another doctor:—

> Dr. X desires to inform you that, having undertaken military duties, he will be absent from his practice after ...., 191.... By mutual arrangement, the doctors named below have undertaken to attend his patients during his absence. To assist in carrying out this arrangement, you are particularly requested to inform the doctor whose services you require that Dr. X is your usual medical attendant. Those doctors whose names are marked with an asterisk are willing to attend patients under the Insurance Act, and insured persons on Dr. X's list calling in another doctor will remain on that doctor's list until the return of Dr. X.

The patients on receipt of this circular will select from the list appended thereto by their own medical attendant one of the doctors named thereon, with limitations already specified as to the kind of practice. The payment to the substitute doctor in the case of private patients shall be half of all fees earned, the fees being those usually charged by the absent practitioner. In Insurance Act cases one-half of the quarterly cheque from the Insurance Committee shall be retained by the absent doctor, the other half being divided pro rata among those doctors who have attended his insurance patients. The accounts for medical attendance undertaken on behalf of the military medical man shall be sent out by him or by some one appointed by him, and it is urged that he leave power of attorney with some person to act for him during his absence. All sorts of professional services, including consultations, inquests, court fees, and so on, rendered in consequence of such introduction to a military medical man's patients are to be regarded as services rendered on his behalf. Out-of-pocket expenses shall be divided equally between the absent doctor and his substitute, who must keep full records of all attendances and prescriptions given and forward them within 14 days after each quarter day to the absent doctor or his nominee. On returning to practice from military duties the medical man shall make within six months all payments due to those doctors who have acted as his substitutes.

NEW MILITARY HOSPITALS.—The Newcastle City Lunatic Asylum at Gosforth is being transformed into a military hospital. Some 400 wounded men are now being accommodated there, and when the work is complete it will be able to take 1040. Colonel Prescott, R.A.M.C., is in command.—Highbury, Moor Green, the residence of the late Right Hon. Joseph Chamberlain, now a hospital under the control of the 1st Southern General Hospital, received its first batch of 40 wounded men recently. The hospital is to accommodate 145. It is staffed entirely by the Voluntary Aid Detachment from the 30th Worcestershire Division.—The war hospital committee of the Stoke board of guardians has recommended the board to offer to the War Office the female mental wards of their infirmary besides the wards already offered and accepted, with a view to bringing up the hospital accommodation to 500 and meet the problems of staffing and stores. As it was shown that ample accommodation was available elsewhere for the present occupants of the wards the scheme was approved.—The Welsh Metropolitan Military Hospital, with accommodation for 900, was formally opened at the Cardiff Mental Hospital on June 9th. The hospital was handed over rent free, the staff being retained, with military commissions, under the same conditions of pay and service as heretofore. The commandant is Lieutenant-Colonel E. Goodall, the former medical superintendent.—Windlesham Moor, Surrey, providing accommodation for 40 wounded men, has been opened as a military hospital, the owner, Mr. L. B. Peters, having equipped it for that purpose.—A large first-line military hospital is to be erected by the Scottish Branch of the Red Cross Society in Bellahouston Park, Glasgow. It is to contain 700 beds.

WOUNDED ALLIES RELIEF COMMITTEE.—The committee has appointed as Médecin-Chef to the Hôpital Militaire Anglais, Limoges, Mr. C. E. S. Jackson, honorary surgeon of the West Norfolk and Lynn Hospital, and senior assistant medical officer to the Queen Mary's Hospital for Children, Carshalton. The position of Médecin-Chef at the Hôpital Militaire 27a, Dieppe, has been accepted by Captain Owen Paget, of the Australian Army Medical Corps, medical officer of health, Fremantle, Australia. These hospitals, which together treat an average of 300 cases weekly, are entirely supported by the committee and have the approval of the French military authorities.

The doctor at present in charge of the Wounded Allies Relief Committee's typhus hospital at Kragujevac, Serbia, writes as follows: "I think I have succeeded in making the best use of an old artillery stable. It is nothing more or less than a stable which they have given us for our hospital. Everything has been concreted and whitewashed; the sanitary arrangements are very satisfactory; we have water close to the hospital for baths and laundry. In fact, the Wounded Allies Relief Committee's hospital is the cleanest and the smartest hospital at Kragujevac. With the 12 nurses whom you have sent out the nursing staff is more than adequate. The hospital will become a surgical one as soon as possible—that is to say, we are awaiting the surgical instruments to start work. All the staff are quite well and are working with courage and goodwill. The only thing that troubles us is that we have no English papers." The hospital accommodates 100 patients, and Colonel Joseph A'Hearne recently left England to take up the position of medical superintendent. In the meantime the medical work is being admirably performed by two Belgian doctors.

THE BRITISH FARMERS' RED CROSS FUND.—A further sum of £5000 has been sent by the British Farmers' Red Cross Society to the British Red Cross to pay for the British Farmers' Enteric Hospital at Calais. This makes £8000 in all. The Fund has also sent two complete hospitals to Serbia. It is intended to appropriate the next £20,000 collected for the wounded among the British forces at the Dardanelles.

SCHOOLS AS MILITARY HOSPITALS.—From the annual report of the Board of Education it appears that by the month of April the military authorities had taken over for hospital purposes 60 elementary and 17 secondary schools, 8 training colleges, and 2 universities. In addition, there were in occupation as billets, stores, &c., 178 elementary and 18 secondary schools, 14 technical schools, and 2 training colleges. In the great majority of cases the loss of the school premises has not been allowed to stop the work of the school. Local authorities, managers, and teachers by their efforts have succeeded in minimising the results of this interruption.

CORSTORPHINE HOSPITAL BEDS AT ROUEN AND BOULOGNE.—As a result of the appeal for funds in the parish of Corstorphine the sum of £234 12*s.* 6*d.* has been collected, and it has been decided to endow two beds—one at Rouen and another at Boulogne—the surplus funds being reserved for administration by the Edinburgh Committee of the Red Cross Association.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—An ordinary meeting of the Council was held on June 10th, Sir Frederic Eve, senior Vice-President, being in the chair. The secretary reported that the President left England on May 29th to carry out duties assigned to him by the Admiralty, and would probably be absent for about three weeks. A letter was read from Mr. C. A. Ballance stating that he was going to Malta by request of the War Office and asking the Council to sanction his absence from their meetings. Leave of absence was given. A report was read from the Board of Examiners in Anatomy and Physiology for the Fellowship stating that at the recent examination 42 candidates were examined, of whom 14 were approved and 28 rejected. A report was read from the Court of Examiners stating that at the recent examination for the Fellowship 24 candidates were examined, of whom 8 were approved and 16 rejected. The following are the names and medical schools of the successful candidates:—

Shridhar Bheekajee Gadgil, B.A. Bombay, M.R.C.S., L.R.C.P., Bombay University and University College Hospital; Robert Edward Collins, M.B. Edin., M R.C.S., L.R.C.P., Edinburgh University and St. Bartholomew's Hospital; Louis Carnac Rivett, M.R.C.S., L.R.C.P., Cambridge University and Middlesex Hospital; Lalit Mohan Banerji, M.S. Calcutta, M.R.C.S., L.R.C.P., Calcutta Medical College and St. Bartholomew's Hospital; Arthur Oliver Gray, M.R.C.S., L.R.C P., Middlesex and St. Bartholomew's Hospitals; James Renfrew White, M.B., Ch.B. New Zealand, M.R.C.S., L.R.C.P., Otago University and Middlesex Hospital; Charles Jennings Marshall, M.D. Lond., M.R.C.S., L.R.C.P., Charing Cross Hospital; and Benjamin Thomas Edye, M.B., Ch.M. Sydney, Sydney University and St. Bartholomew's Hospital.

Diplomas of Member were also conferred upon the following gentlemen who have now complied with the by-laws:—

George Maudsley Jackson, Bristol University; and Charles Wainwright Fort, Manchester University.

In accordance with a report from the Board of Examiners in Dental Surgery it was resolved to issue Licences in Dental Surgery to the following successful candidates:—

Arthur Bramston Austin, Middlesex and Royal Dental Hospitals; Edward Doane Barrows, D.M.D. Harvard, Charing Cross and Royal Dental Hospitals; John Leycester Dudley Buxton, University College and Royal Dental Hospitals; James Arthur Balfour Carson, Middlesex and Royal Dental Hospitals; Leopold Harold Cross, Guy's Hospital; Wilfrid Arthur Culverwell, Bristol University and Royal Dental Hospital; William Robert Davies, Liverpool University; Ernest Archibald Dawson, Guy's Hospital; John William Edgar, Middlesex and National Dental Hospitals; Julius Gillis, Middlesex and Royal Dental Hospitals; Cyril Bowdler Henry, Westminster and Royal Dental Hospitals; Walter Sebastian Herman, B.A. Cantab., Cambridge University and London Hospital; Francis William Holgreaves, Liverpool University; Arthur Edmund Lowein and Launcelot Machin, Guy's Hospital; Albert Victor Milnes, Liverpool University; Leonard Stanley Pilbeam and Petrus Lafras van Schalkwijk, Guy's Hospital; Herbert Vernon, Manchester University; Willem Jacobus Rousseau Viljoen, Guy's Hospital; William Harold Waldman, Middlesex and Royal Dental Hospitals; Frederick Harry Wallace, Guy's Hospital; and Leslie Williams, Birmingham University.

It was resolved to close the Museum until further notice. The Council proceeded to elect the examiners for the ensuing year, and all the present examiners were re-elected.

A Member who had been guilty of advertising was removed from the roll.

DEATH OF DR. GEORGE MOORE.—Dr. George Moore, who died recently in his eighty-fourth year at Torquay, practised formerly in Hartlepool, where he was honorary physician to the Hartlepool Hospital and medical officer of health, and later in Jersey, where he was medical superintendent of the lunatic asylum. A student at the Middlesex Hospital, he took the M.R.C.S. in 1853, proceeding later to the M.D. of St. Andrews.

WOMEN'S HOSPITAL FOR CHILDREN, HARROW-ROAD.—At the annual court of this hospital, which was held at Kensington Town-hall on June 10th, a special appeal was made for funds to endow an adequate in-patient department. Countess Brassey, Lady Hall, Miss E. Robins, Dr. L. Garrett Anderson, and Dr. Flora Murray urged the need of the hospital which is staffed entirely by women and situated in a crowded district. At present the in-patients' department has only seven cots. Treatment is given to children up to the age of 14 years.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Naval Casualties.

Mr. Asquith has now given to the House of Commons statistics regarding the casualties amongst officers and men of the Royal Navy, Royal Marines, and Royal Naval Division to May 31st. The figures include the casualties resulting from the loss of the *Bulwark* and other accidental losses. The figures are as follows:—

	Officers.	Men.
Killed	549	7,696
Wounded	181	2,262
Missing	74	2,785
Total...	804	12,743

This makes the total of casualties of all ranks 13,547.

Milk and Dairies Acts Postponement Bill.

A Bill has been introduced in the House of Commons by Mr. Hayes Fisher, on behalf of the Government, to postpone the operation of the Milk and Dairies Act, 1914, and the Milk and Dairies (Scotland) Act, 1914. It was read a first time.

HOUSE OF COMMONS.

Thursday, June 10th.

The War and Epidemics.

Mr. Ginnell asked the Under Secretary for Foreign Affairs whether any international, precautionary or preventive measures were being taken, or instructions issued, against the danger of plague, cholera, or other rapidly spreading disease arising from the war; and, if not, whether the most competent medical advice on the subject would be obtained and made public at the earliest possible date.—Lord Robert Cecil replied: Discussions are in progress between French and British experts as to measures to be taken for the prevention of epidemics, and the civil population will receive ample warning and advice should any danger arise.

Medical Consultants to the Navy.

Mr. Joynson-Hicks asked the Secretary to the Admiralty when the contracts with the six medical men who were receiving £5000 a year from the Admiralty expired; and whether, having regard to the fact that equally eminent doctors were serving with the army at the front for the ordinary pay of Royal Army Medical Corps officers, he would determine the Admiralty contracts at the earliest possible moment.—Mr. Macnamara answered: The question is receiving consideration. I hope a statement may be made shortly.

Treatment of Mental Strain amongst Soldiers.

Mr. Rendall asked the Under Secretary for War whether cases, which in civilian life were uncertifiable, were amongst soldiers being treated as incipiently insane by being placed not under general physicians but under medical officers whose practice as regarded experience in nervous disturbance had been limited to their practice in asylums for the insane; if so, whether such uncertifiable patients as had been subjected to lunacy control had no right, while still in the army, which was comparable to the right possessed by civilians of appeal to a magistrate, and what steps he proposed to take to give soldiers rights equal to those possessed by all civilians.—Mr. Tennant said in reply: Uncertifiable cases of nervous disturbance are being treated in the neurological sections of general hospitals and in addition in two institutions which have been taken over from the Board of Control as military hospitals. In the former they are under the care of selected general physicians and neurologists, in the latter under physicians whose previous experience has been largely that obtained in practice in mental institutions. In all such hospitals the patients have exactly the same rights as a soldier undergoing treatment in a purely military hospital, such as the Herbert Hospital at Woolwich which existed as such in times of peace.

Mr. Rendall: May I take it now that the soldiers are placed under the control of lunacy doctors, and while under such control have not the right of appeal which ordinary civilians have to a magistrate?—Mr. Tennant: I do not think that is a fair deduction to make from my answer.

Mr. Rendall: But is not this the arrangement that the doctors under whom soldiers are placed when they break down mentally, although they are lunacy doctors and have at some time been connected with lunacy establishments, have a right to certify, and that the soldiers have been put under these doctors without any power of appeal?—Mr. Tennant: I think that the statement of my honourable friend goes a little beyond the information I have given him. It is a fact that these medical men have had previous lunacy experience, but they do not necessarily exercise and are not necessarily vested with the same powers as those with which they are vested during peace time over civilians. In these military cases, as I have said, the patient has the same right as a soldier undergoing treatment in a purely military hospital.

Mr. Rendall: Are greater powers not now exercised without there being any right of appeal?—Mr. Tennant: No, sir.

Colonel Yate: May we take that as an assurance that soldiers who break down mentally temporarily are not placed in lunatic asylums?—Mr. Tennant: I have already informed the House that strict orders have been given that cases of this kind are not to be treated as incurable until it is absolutely certain that they are incurable. Every chance is given for the man to be cured.

Colonel Yate: In the meantime they are not placed in an asylum?—Mr. Tennant: No, that is right.

Mr. Rendall: Is any mental case certified while under military control?—Mr. Tennant: Mental cases are not certified until it is necessary to discharge them from the service.

Mr. Rendall asked the right honourable gentleman to state the names of the clearing houses to which soldiers of the rank and file when disabled by nerve strain were sent on arrival from the front, and the names of the military hospitals specially adapted for the treatment of uncertifiable cases of mental strain: how many of these border-line cases were at present in each one of these institutions, indicating at the same time for what purpose the institution was used previous to being commandeered; and in how many instances these uncertifiable cases had been put in charge of medical officers now gazetted officers of the Royal Army Medical Corps who, up to the time when the institutions were commandeered, belonged to the asylum service and who still retained that status in addition to their military status.—Mr. Tennant replied: I am obtaining this information.

Mr. Augustine Roche asked the right honourable gentleman whether soldiers invalided from the front, or who had temporarily lost their mental balance, were to be maintained out of Imperial funds.—Mr. Tennant answered: Soldiers who have temporarily lost their mental balance while with the armies in the field, are at present being retained in the army under treatment at the public expense.

Mr. Rendall: Is it a fact that many soldiers have been put in lunatic asylums in this country?—Mr. Tennant: The number is about 17.

Mr. Rendall: Then there have been some?—Mr. Tennant: By mistake.

Mr. O'Donnell: Will the men go on the local rates after they are declared to be incurable?—Mr. Tennant: I think they go on the local rates, but I am not quite sure.

Naval Surgeons in Charge of Hospital Ships.

Commander Bellairs asked the Under Secretary for War whether the naval surgeons in charge of hospital ships having the rank of fleet-surgeon in the Royal Navy had been given the rank of major in the Royal Army Medical Corps; and whether, having regard to the fact that a fleet-surgeon ranked with a lieutenant-colonel, the latter rank could be accorded to them, no question of pay being involved, instead of degrading them one step in rank.—Mr. Tennant wrote in reply: These officers voluntarily offered their services and accepted the rank of major. They have no experience for army requirements beyond that which is to be obtained by medical charge of hospital ships, and are not, therefore, eligible for service in the rank of lieutenant-colonel.

Housing Accommodation in Wrexham.

Mr. Wardle asked the President of the Local Government Board what action the Board had taken, or intended to take, in connexion with the neglect of the Wrexham town council to carry out the recommendations of the Board, based upon an inquiry held in 1913, to build at least 30 houses suitable for the working classes; whether he was aware that in the report of the Wrexham medical officer of health for 1914 it was stated that at that time there was not a single house vacant at a week's rental of 6s. or less; and whether, in view of the scarcity of working-class accommodation in Wrexham, pressure would be brought to bear on the local authority to take steps to meet the admitted need.—Mr. W. Long answered: The Local Government Board has been in communication with the town council of Wrexham in regard to the provision of houses for the working classes, and the council has made application for sanction to a loan for the erection of 30 houses. A local inquiry in regard to the matter is to be held on June 17th.

Monday, June 14th.

Accumulations of Refuse.

Sir J. D. Rees asked the President of the Local Government Board whether he had issued his proposed circular regarding the accumulation of refuse in the neighbourhood of dwellings, and whether it was to be addressed to rural district, as well as to county borough and urban district councils.—Mr. Long replied: The circular referred to was issued last month[1] to urban authorities. I am considering the issue of another circular to all sanitary authorities urging special precautions for the prevention of disease during the summer months.

Notification of Births Act.

Mr. Lough asked the President of the Local Government Board whether his attention had been drawn to the increase of infant mortality both in London and throughout the country; and whether, having regard to the seriousness and urgency of this question in its relation to the problems created by the war, he could see his way to introduce and pass as an uncontentious measure a Bill which, by the more stringent enforcement of the prompt registration of births, the greater safeguarding of the health of mothers, the establishment of public crèches, or other methods, might tend to abate this evil.—Mr. Long answered: I am fully aware of the importance of this matter, and as I intimated to a deputation on Thursday last, I am anxious to introduce without delay a measure making the Notification of Births Act of general application and conferring certain powers on local authorities for safeguarding the health of infants and expectant mothers. I shall be glad if honourable Members will coöperate with me in securing the unopposed passage of the Bill.

Treatment of Nerve Strain amongst Soldiers.

Mr. Rendall asked the Under Secretary for War to state the names of the clearing houses to which soldiers of the rank and file when disabled by nerve strain were sent on arrival from the front, and the names of the military hospitals specially adapted for the treatment of uncertifiable cases of mental strain; how many of these border-line cases were at present in each one of these institutions, indicating at the same time for what purpose the institution was used previous to being commandeered; and in how many instances these uncertifiable cases had been put in charge of medical officers now gazetted officers of the Royal Army Medical Corps who, up to the time when the institutions were commandeered, belonged to the asylum service and still retained that status in addition to their military status.—Mr. Tennant said in reply: The clearing houses are the Royal Victoria Hospital, Netley, and the 4th London (T.F.) General Hospital, Denmark Hill. These cases are sent to various military hospitals throughout the country and special neurological sections have been established in connexion with the Territorial Force general hospitals so as to bring the patients under the observation of the eminent neurologists at these centres. It is not possible with any degree of accuracy to give the numbers of what my honourable friend calls "border-line cases." The Red Cross Military Hospital, Maghull, and the Springfield War Hospital were taken over as military hospitals through the Board of Control and the superintendents of these institutions were appointed to the charge of the military hospitals when they were taken over. For the time they are purely military medical officers.

Mr. Rendall asked the Under Secretary of State for War whether the new military hospital shortly to be opened at Napsbury had been known for years as a county lunatic asylum; whether its lunacy staff of medical officers were to be retained to take charge of nerve-shattered soldiers without any appeal or judicial investigation; and whether he would consider the possibility, as an alternative, of treating transiently acute cases of nerve-shock in the same way as delirious cases were treated on medical lines in ordinary hospitals, and so save both the injured soldiers and their families from the opprobrium associated with having been treated in a lunatic asylum.—Mr. Tennant replied: The answer to the first two parts of the question is in the affirmative; but I am unaware what appeal or judicial investigation is contemplated by my honourable friend. The cases of nerve-shock to which the word "transient" may be applicable will be sent to military hospitals. I can assure my honourable friend that neither the desire nor the intention is lacking in my military medical advisers to save the soldiers and their families from the opprobrium associated with having been treated in a lunatic asylum.

Battalion Medical Officers.

Sir Philip Magnus asked the Under Secretary for War whether there was any shortage of battalion medical officers in the army; if so, what steps were being taken to remedy such shortage; and whether the Army Medical Department was conferring with the official representatives of the medical profession in this country with a view to the better organisation of the medical profession for war purposes.—Mr. Tennant answered: There is not at present any shortage of battalion medical officers, but more are still required in order that the needs of the new Army and the Territorial Force may be fully supplied. Considerable numbers are being engaged every week, and the Director-General of the Army Medical Service is receiving every support from the official representatives of the civil medical profession with whom, not only on this but also on other matters affecting the health and well-being of the troops, he is in constant and cordial relations.

The King George Hospital.

Sir Philip Magnus asked the Under Secretary for War whether he could state how many medical officers were at present employed at the King George Hospital, Stamford-street; how many of these were of military age; what was the proportion of such officers to the number of patients, and how that proportion compared with the proportion of medical officers to patients in the general medical hospitals; whether men above the age of 40 were eligible for appointments at the King George Hospital; and whether the staff of younger men might be reduced if they were assisted by medical men over 40 years of age working part time.—Mr. Tennant said in reply: The medical officers of this hospital were appointed by the Red Cross Society and I understand that there are 25 resident and 24 are of military age, though I cannot say how many of these are, in fact, eligible for any service. There is one medical officer to 66 beds, which is a somewhat more favourable proportion than in other hospitals. An arrangement of part-time service would not be convenient, I believe, but I sympathise with the object the honourable gentleman has in view, and inquiries will be made to see whether any of the junior medical officers who are eligible could be released for general medical service with the army.

Precautions against Asphyxiating Gases.

Sir Arthur Markham asked the Under Secretary for War: 1. Whether, seeing that Dr. Haldane was requested by the Government to report on the poisonous gases used by the Germans, he was aware that Dr. Haldane at once instructed Mr. S. F. Winmill, B.A., B.Sc., chief chemist of the Doncaster Coalowners Scientific Research Committee, to make tests of the best forms of respirators for the use of the troops, and that Dr. Haldane stated that the form of respirator proposed to be issued by the War Office was of no value whatever; whether, notwithstanding this, Lord Kitchener made an appeal to the women of the country to make these respirators; whether many men at Hill 60 lost their lives at Hill 60 when using this respirator; and whether the Director-General of Medical Services was consulted and approved this pattern of respirator. 2. Whether, seeing that Mr. Winmill had presented a report to the Doncaster Coalowners Scientific Research Committee that men could, if they took certain precautions, evade poison gases without even using respirators, he would say whether Dr. Haldane and Mr. Winmill had been asked by the War Office to make any report on the question; whether, if no such report had been asked for, he would at once ask Dr. Haldane to make a brief report stating the precautions which would prevent loss of life even though no respirator was used or available; and would he see that this report was at once sent to General Sir John French. 3. Whether he was aware that Dr. Haldane was recognised in all countries as one of the greatest living physiologists, his books being the recognised standard authority; whether he was aware that Dr. Haldane had for years past given his services to the Home Office to assist in obtaining a reliable breathing apparatus for use in mines; and whether he was aware that Dr. Haldane has made innumerable tests of all types of breathing apparatus.—Mr. Tennant answered: The eminence of Dr. Haldane as an authority is of course well known, and he has advised the War Office on the matter in question and continues to advise. The type of respirator used at the outset was that approved by the Admiralty, and it was adopted with the approval of the Director-General of the Army Medical Service until a more suitable type could be devised for the special circumstances. I have on previous occasions explained the circumstances in which an appeal was made to the public. I have no knowledge of the report made by Mr. Winmill, but I may inform my honourable friend that Dr. Haldane has already indicated certain protective measures that may be taken by troops, if they happen to be without one of the authorised respirators, and the necessary instructions have been given by the military authorities in France. The means of protection now in use are reported on most favourably by the authorities in France. Recourse has been had in studying these problems to all the best brains in the country.

TUESDAY, JUNE 15TH.

Notification of Births Act.

Mr. Snowden asked the President of the Local Government Board whether he was aware that the latest return of the Registrar of Births showed that the birth-rate in London was now from 400 to 500 per week below the average of the last five years, that children had been dying in London during the last 13 weeks at the rate of 200 per week above the rate for the corresponding weeks of last year, that the increased mortality among children was general throughout the country, that this increase was attributed to causes connected with the war, that the problem was now so serious that if the present rate be continued for 42 weeks all the infants would have succumbed; in view of the state of things would he at once meet the defects in the present law by a small Bill to amend the Notification of Births Act, empowering local authorities to make such arrangements as might be sanctioned by the Local Government Board for securing the health of mothers and infants; and would he at the same time respond to the many appeals which have been made to his department to make the Notification of Births Act universal, especially in view of the fact that 1 child in 10 born died within 48 hours of birth.

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[1] THE LANCET, June 5th, p. 1190.

Sir George Toulmin asked the right honourable gentleman whether he was prepared to introduce legislation for the amendment and strengthening of the Notification of Births Act.—Mr. Long (replying to both honourable Members) said: The births registered in London during the second quarter of this year averaged 79 per week fewer than the corresponding weekly number in the past five years, and during the 13 weeks ending June 5th there has been a weekly excess in the deaths of children under 5 years of age averaging 169. This excess has been mainly due to an exceptional prevalence of measles and whooping-cough with their usual sequelæ. The suggestion in the question that, if the present rates be continued for 42 weeks, all the infants will have succumbed, is, I am happy to say, devoid of foundation, as is also the statement that 1 child in 10 dies within 48 hours of birth. As regards the legislation suggested in the two questions, I would refer to the answer which I gave yesterday, in which I stated that I was anxious to introduce without delay a measure making the Notification of Births Act of general application, and conferring certain powers on local authorities for safeguarding the health of infants and expectant mothers.

Wednesday, June 16th.

Royal Army Medical Corps.

Colonel Yate asked the Under Secretary for War whether, considering that between July 31st, 1914, and March 31st, 1915, only 14 captains in the Royal Army Medical Corps were promoted majors, and during the same period some 97 majors were promoted lieutenant-colonels, he would now take steps to have a corresponding number of captains promoted to the rank of major.—Mr. Tennant replied: The majors were promoted to the rank of lieutenant-colonel to fill appointments for officers of that rank. The promotion of captains will be considered as and when majors are required. There is no fixed establishment of the latter rank, and under ordinary circumstances promotion to it goes by time qualification.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Ahearn, M. J., has been appointed Medical Officer of the Lowpark Dispensary District by the Swinford Board of Guardians.

Davies, Howard, M.R.C.S., L.S.A., has been appointed Temporary Medical Officer of Health and Superintendent of the Isolation Hospital, Pontypridd.

Ibotson, Edward C. B., M.D., B.S. Lond., L.S.A., has been appointed Certifying Surgeon under the Factory Act for the Civil Parish of Talyllyn and part of Machynlleth Rural District.

McMillan, A. Lewis, M.D., C.M. Glasg., has been appointed Consultant Eye Specialist to the Glasgow Corporation Hospitals.

Ogilvie, W. M., M.B., C.M. Aberd., has been appointed Medical Superintendent of the Ipswich Borough Mental Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

Aberdeen, University of.—Examiners.

Bath, Winsley Sanatorium for Consumption.—Assistant Resident Medical Officer. Salary £250 per annum, with board, residence, and laundry.

Bexley, Kent, London County Asylum.—Locum Tenens Medical Officer. Salary 6 guineas a week, with quarters, board, and washing.

Birkenhead Borough Hospital.—House Surgeon. Salary £300 per annum, with board and laundry.

Birmingham General Dispensary.—Resident Medical Officer, unmarried. Salary £250 per annum, with apartments, attendance, &c.

Birmingham and Midland Eye Hospital.—Junior House Surgeon. Salary £100 per annum, with residence, board, &c.

Blackpool County Borough.—Clinical Tuberculosis Officer.

Bolingbroke Hospital, Wandsworth Common, S.W.—House Surgeon. Salary £100 per annum, with board-residence.

Bolton Infirmary and Dispensary.—Senior House Surgeon. Salary £230 per annum, with apartments, board, and attendance.

Bristol Royal Infirmary.—Assistant to Ear, Throat, and Nose Department.

Brook War Hospital, Shooters Hill, Woolwich.—Resident Assistant Surgeons and Physicians. Salary £1 a day, with residence, board, and lodging.

Bury Infirmary.—Senior and Junior House Surgeons. Salary £175 and £150 per annum respectively, with board, residence, and washing.

Cardiff, Welsh Metropolitan War Hospital, Whitchurch, near Cardiff.—Pathologist and Bacteriologist. Salary £1 per day, with board, apartments, and washing.

Carlisle Non-Provident Dispensary.—Resident Medical Officer. Salary £200 per annum, with apartments (not board).

Chelsea Infirmary, Cale-street, S.W.—Assistant Medical Officer. Salary £300 per annum, with rations, apartments, and washing.

Cirencester, Glos., 1st South Midland Mounted Brigade Field Ambulance.—Two Medical Officers to complete 2nd Line (Territorial).

Evelina Hospital for Sick Children, Southwark, S.E.—Clinical Assistants in Out-patient Departments.

Folkestone, Royal Victoria Hospital.—House Surgeon. Salary as agreed, with board, residence, and laundry.

General Lying-in Hospital, York-road, . S.E.—Resident Medical Officer for three months.

Guildford, Royal Surrey County Hospital.—House Surgeon. Salary £150 per annum, with board, residence, and laundry.

Hospital for Consumption and Diseases of the Chest, Brompton.—House Physician for six months. Salary 30 guineas. Also Assistant Resident Medical Officer. Salary £100 per annum, with board and residence.

Inverness, Northern Infirmary.—House Surgeon. Salary £150 per annum, with board, &c.

Leamington Spa, Warneford, Leamington, and South Warwickshire General Hospital.—Second Resident Medical Officer. Salary £200 per annum, with board, residence, and laundry.

Leeds Public Dispensary.—Female Resident Medical Officer Salary £130 per annum, with board, residence, and laundry.

Macclesfield General Hospital.—House Surgeon. Salary £150 per annum, with board and residence.

Manchester County Asylum, Prestwich.—Locum Tenens. Salary 6 guineas per week.

Manchester Northern Hospital for Women and Children. Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Margate, Royal Sea-Bathing Hospital for Surgical Tuberculosis.—Resident Surgeon. Salary at rate of £150 per annum, with board, residence, and laundry.

National Hospital for Diseases of the Heart, Westmoreland-street, W.—Resident Medical Officer for six months. Salary at rate of £80 per annum, with board, residence, and washing.

New Zealand War Contingent Association, 25, Victoria-street, London, S.W.—Two Visiting Surgeons.

Norwich Incorporation.—District Medical Officer. Salary at rate of £100 per annum.

Norwich, 3rd Line Depôt, 2nd East Anglian Field Ambulance.—Medical Officers. Pay and allowance as in Regular Army.

Nottingham General Hospital.—Senior House Physician and Assistant House Physician. Salary at rate of £300 and £250 per annum respectively, with board, residence, and laundry.

Oldham County Borough.—Assistant Schools Medical Officer. Salary £325 per annum.

Plymouth, South Devon and East Cornwall Hospital.—House Surgeon and House Physician. Salary as arranged, with board, residence, and washing.

Poplar and Stepney Sick Asylum, Devon-road, Bow, E.—Temporary Assistant Medical Officer. Salary 7 guineas per week, with board and residence.

Portsmouth Workhouse Infirmary, Workhouse, and Children's Home —Female Second Assistant Medical Officer. Salary £150 per annum, with apartments, rations, &c.

Queen Charlotte's Lying-in Hospital, Marylebone-road, N.W.—District Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

Rhondda Urban District Council.—Temporary Assistant Medical Officer of Health and School Medical Officer. Salary £350 per annum.

Royal Eye Hospital, St. George'e-circus, Southwark, S.E.—House Surgeon. Salary £75 per annum, with board, apartments, and washing.

St. Mary's Hospital for Women and Children, Plaistow, E.—Assistant Resident Medical Officer. Salary at rate of £90 per annum, with board, residence, and laundry.

Salford County Borough.—Medical Officer for Maternity and Child Welfare work. Salary £300 per annum.

Salisbury General Infirmary.—House Surgeon and Assistant House Surgeon, unmarried. Salary £150 and £100 per annum respectively, with apartments, board, lodging, and washing.

Sheffield Royal Infirmary.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.

Sheffield, Wharncliffe War Hospital, Middlewood-road.—Resident Medical Officers.

South London Hospital for Women, 88-90, Newington-causeway, S.E.—Female Anæsthetist.

Southampton, Parish Infirmary, Shirley Warren.—Resident Assistant Medical Officer. Salary £250 per annum, with apartments, rations, washing, and attendance.

Stockport Infirmary.—Senior House Surgeon. Salary £200 per annum, with board, washing, and residence.

Sunderland Royal Infirmary.—Resident Medical Officer. Salary £150 per annum, with board, residence, and laundry.

Swansea General and Eye Hospital.—House Physician. Salary £200 per annum, with board, apartments, and washing.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £250 per annum, with board, residence, &c.

VENTNOR, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Isle of Wight.—Assistant Resident Medical Officer.

WALSALL AND DISTRICT HOSPITAL.—Assistant House Surgeon and Anæsthetist. Salary £150 per annum, with board, residence, and laundry.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior and Junior House Surgeons. Salary £180 and £120 per annum respectively, with board, apartments, and laundry.

WEST BROMWICH AND DISTRICT HOSPITAL.—House Surgeon and Assistant House Surgeon, unmarried. Salary £150 and £120 per annum respectively, with residence, board, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL.—Resident Medical Officer. Salary £160 per annum. Also House Physicians and House Surgeons. Salary £120 and £100 per annum respectively, with board, residence, and washing.

WEST HAM UNION.—Third Assistant Medical Officer and Fourth Female Assistant Resident Medical Officer at Infirmary, Whipps-Cross-road, Leytonstone, N.E. Salary £200 and £180 per annum respectively. Also Female Resident Assistant Medical Officer at Workhouse, Union-road, Leytonstone, N.E. Salary £180 per annum. Each with usual residential allowances.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £150 per annum, with board, apartments, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Buckhaven, in the county of Fife; at Kirkham, in the county of Lancaster; at Market Bosworth, in the county of Leicester; and at Rothes, in the county of Elgin.

Births, Marriages, and Deaths.

BIRTHS.

BOURNE.—On June 13th, at Nottingham-place, W., the wife of Lieutenant A. W. Bourne, F.R.C.S., of a daughter.

LINTON.—On June 14th, at Tunbridge Wells, to the wife of Captain F. C. Linton, R.A.M.C. (T.), a son and a daughter.

MILLIGAN.—On June 4th, at Hessle, Yorks, to Dr. and Mrs. H. P. Milligan, a son.

ROPER.—On June 8th, at Biscovey House, Par, Cornwall, to Dr. and Mrs. Charles Roper, a son.

WEBB.—On June 9th, at "Moreton," Park Drive, Hampstead, to Lieutenant G. Harvey D. Webb, R.A.M.C. (T.F.), and Mrs. Harvey Webb, a daughter.

MARRIAGES.

EVANS—RUTHERFORD.—On June 10th, at Dunkeld Cathedral, Albert Edward Evans, M.B., to Jessie Dorothy, second daughter of the Rev. T. R. Rutherford, M.A., Minister of Dunkeld.

PARROTT—MEADE.—On June 15th, at St. Michael's Church, Greinton, Harold Winnock Parrott, M.B, B S., son of A. G. Parrott, M.R.C.S., L.R.C.P., of Shanghai, to Ella Mary, daughter of Mr. and Mrs. Frank Meade, of Greinton, Somerset.

ROOK—CALWAY.—On June 12th, at St. George's Church, Wilton, Taunton, Henry Colwell Rook, Lieutenant, R.A.M.C. (S.R.), to Alice Marguerite, elder daughter of Mr. and Mrs. F. Calway, of Henley Lodge, Taunton.

SCHOFIELD—OVER.—On June 11th, at Crowthorne, Berks, Harry Schofield, R.A.M.C., to Nellie, fourth daughter of Mr. and Mrs. H. Over, Wellesley House, Crowthorne, Berks.

DEATHS.

HOLLIS.—On June 4th, at Tower House, Freshwater, Isle of Wight, Alfred Hollis, M.D., aged 69 years.

MOORE.—On June 10th, at Torquay, George Moore, M.D., J.P., in his 84th year.

TREWMAN.—On June 13th, suddenly, George Turner Trewman, Lieutenant-Colonel, R.A.M.C., aged 59 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

BOOKS, ETC., RECEIVED.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION, Baltimore, U.S.A.
Proceedings of 70th Annual Meeting, May, 1914. Vol. XXI.

ARNOLD, EDWARD, London.
Urgent Symptoms in Medical Practice. By Robert Saundby, M.D. Edin., Lt.-Col. R.A.M.C., T. Price 7*s*. 6*d*. net.

BAILLIÈRE, TINDALL, AND COX, London.
The Selection of the Recruit. By Captain S. J. Beggs, M.D., R.A.M.C. (Reserve of Officers). Price 2*s*. 6*d*. net.

BALE, JOHN, SONS, AND DANIELSSON, London.
A Practical Manual of Tuberculosis for Nurses. By L. T. Burra, M.D. Oxon. Price 2*s*. net.

CHAPMAN AND HALL, LIMITED, London.
Drink and the War: From the Patriotic Point of View. By Marr Murray. Price 1*s*. net.

CHURCHILL, J. AND A., London.
Sanitation in War. By Major P. S. Lelean, F.R.C.S., D.P.H., R.A.M.C. With an Introduction by Surgeon-General Sir Alfred Keogh, K.C.B., F.R.C.P. Price 5*s*. net.

HEINEMANN, WILLIAM, London.
The Book of the Fly: A Nature Study of the House-fly and its Kin. By G. Hurlstone Hardy. With an Introduction by Halford Ross. Price 2*s*. 6*d*. net.

Notes, Short Comments, and Answers to Correspondents.

MONSTERS AND SCHRECKLICHKEIT.

So the "wild girl of Naini Tal," who received notice in these pages some months ago, is now pronounced on good authority to be an ordinary imbecile. All men are inclined to be mythopoetic in such matters, for there lingers in the human breast a tendency to discover prodigies, inherited from savage ancestors. Monsters of all kinds, including "wild" children, were indeed better known to a more primitive generation than to the present; and at one time the production of monsters was an industry having for its double object pecuniary gain and the satisfaction of superstition. An Italian work was published as lately as the closing years of the nineteenth century in order to show the manner in which monstrosities can be produced and grown. Once alive and kicking, your monstrosity can be exhibited to the public for cash. An old authority on prodigious births is Lycosthenes. In his "Prodigiorum et Ostentorum Chronicon," published at Basle in 1557, are some remarkable recitals. He describes, for instance, a cadet of a noble Polish house who was "terrible to behold," for he was born with flaming and shining eyes. His mouth and nostrils were similar to those of an ox. He had also long horns and a back hairy as a dog's, and cat's eyes, which were situated far below his chest—we are not told exactly where. These eyes looked "hideously and frightfully." Furthermore, this Pole "had the heads of dogs upon both elbows and at the whirlbones of each knee." His feet resembled those of the swan, and he possessed "a tail which was crooked backwards about half an ell long," so that sitting down was impossible. Born at Cracow, this noble Polish cadet remained perfectly silent until within an hour of his death, when he uttered the one word "Watch," which was held to refer to one or other of the many revolutions of the time (1543).

Even the most rational of medical men concerned themselves with descriptions of abnormalities. Ambroise Paré describes a small monster, of the Molline family at Antwerp, "wholly like a dog, save that it had a shorter neck and the head of a bird." Also a young Savoyard, who had a long piece of flesh, like a French hood, hanging down from the nape of his neck almost to his heels, while two other pieces, like the collar of a shirt, were wrapped round his neck. He had also white boots of flesh on his legs, doubled down like the boots of brigands in old-world melodrama. The Duke of Savoy caused him to be brought to court, "which performed, one would hardly imagine the various censures the courtiers gave of the creature."

Now Paré, a Frenchman, and Lycosthenes (Conrad Wolffhart), who was a professor of Basle and a native of Alsace, were both inheritors of noble traditions of culture. If in matters touching monstrosity these enlightened men were credulous, how much more so must have been the inhabitants of remote and half-civilised regions. Northern Germany, for instance, is known to have long possessed an intensive tradition of monstrosity and of the terrible, dating from the mythologic epoch. A more grandiosely dreadful, a more Apocalyptic picture than that of the entire annihilation of the world by the Powers of Darkness and Fire, which is the climax of the "Prose Edda," has perhaps never been painted. But the monsters of Germanic mythology and of mediæval medical men are only terrible in vague outline. It was left to a mild Saxon lunacy expert of modern times, Dr. Heinrich Hoffmann, to introduce into the petty mythology of the nursery a pair of degenerates in the persons of the ever-memorable "Struwwelpeter," the self-neglecting little monster of weak intellect, and *der böse Friderich, der wahrer Wüterich*, who dismembered flies and killed birds and cats. The ten episodes in the classic "Struwwelpeter," a chap-book for the nursery, which was published in 1845 and had reached its fortieth thousand before 1860, are mostly of the bloodthirsty kind.

SANITARY CONVENIENCES IN SHOPS.

THE Committee appointed by the Government to consider the question of further enlistment in the distributing trades have represented to the Local Government Board that a difficulty arises in the case of the smaller shops in releasing men of military age for service in the army and replacing them by women by reason of the provisions of the Public Health Acts requiring separate sanitary accommodation for each sex. The Government at the moment are appealing to shopkeepers to set free all their male staff who are medically fit for service, and of age for enlistment. It is found, however, in many cases that separate sanitary accommodation for the two sexes is not available on the premises and such accommodation is required by the Acts. It will be hard on the employer if, having already lost many male assistants, he is called upon to make structural alterations in his premises to meet conditions which are only intended to be temporary, while the need will especially arise in small shops where female labour has not yet been employed. The requirements of the Acts cannot, of course, be dispensed with, and the Board suggest that the difficulty may be met by some temporary arrangement, such as the use, free of charge, of a convenience in a neighbouring house, or of a public convenience near by. We believe that in the case of factories and workshops, where the same problem has arisen, arrangements of this kind have been adopted, with the consent or concurrence of the Inspector of Factories, and have proved satisfactory; and no other economical course is possible. We trust that the sanitary officers, to whom circulars have been issued, will ascertain whether temporary arrangements of the kind indicated can be made, and will generally facilitate the action of any shopkeeper who is willing to allow his male assistants to join the army.

FATAL EXPECTANCY.

To the Editor of THE LANCET.

SIR,—Recently in a conversation with a medical officer in charge of a department especially devoted to tuberculosis he expressed the opinion that he would exclude a diagnosis of pulmonary tuberculosis until a third or even a fourth examination of the sputum revealed each time the presence of T.B., the local symptoms being indefinite and suspicious only. Not, be it observed, that he would exclude the diagnosis only after a third or fourth examination proved negative. Such a view if generally held must surely be fatal to the campaign against consumption. It would be interesting to know if this view is prevalent. Sceptics are not the class from whom progress may be expected in any sphere of life, whereas enthusiasts, though they are apt to fly too high, do help the world to progress. To wait until the symptoms are definite and unmistakable and the complaint has got a firm hold is not good either for the individual or for preventing it spreading.

I am, Sir, yours faithfully,

City-road, E.C., June 10th, 1915. J. J. UDALE.

LIME-JUICE.

WITH the advent of the hot weather there is likely to be a demand for cooling drinks, especially for lemonade and lime-juice. In the South African War lime-juice was provided for the troops in jars and barrels, and quantities were held in reserve at various places, and there is little doubt that far greater amounts of this beverage will be consumed this summer. For the wounded officers and for certain wounded men there is a supply of iced champagne, but an army cannot be kept refreshed on such a costly beverage, even if available. In 1903 Sir Wodehouse Richardson said: "Powdered lime-juice can now be obtained, 2 or 3 ounces of which make several gallons of a very palatable beverage. It is thus far more portable than lime-juice in barrels or bottles. The medical authorities would have to be consulted before this powder could be adopted." We do not know to what medical authorities this refers, unless to the army medical authorities, but the merits of a powder as against a liquid call for careful consideration on the grounds of preservation of the essential properties, keeping qualities in hot weather, freedom from admixture, intentional or accidental, flavour, and so forth.

SCOPOLI.

To the Editor of THE LANCET.

SIR,—With your permission I would supplement your note on Scopolamine on p. 1272 of to-day's issue of THE LANCET by some references to Signor Giovanni Antonio Scopoli, the great naturalist of Cavalese, in the Tyrol, where he was born on June 15th, 1725, 190 years ago. From M. L. Hahn we learn that Scopoli studied the humanities at Trieste and medicine at Innsbruck, where he took his doctorate in 1745. At Innsbruck he developed a strong love for natural history, botany first attracting his attention. As there was no teacher of natural history in the University he was practically self-taught, and formed the basis of a natural classification which much more nearly approaches to Ray's natural one than that of Linnæus. He collected a large number of the plants indigenous to the mountains of Tyrol, and formed the design of publishing a flora of his native country. But the project was defeated by his being called to Styria and afterwards to Vienna, hence he came to Idria, where he obtained a medical appointment. But his love of natural science drew him away from the routine work of medicine, and with renewed energy he applied himself to the study of botany. His mental activity, however, was so great that he embraced in his curriculum entomology, mineralogy, and chemistry. Whilst in practice in Idria he found time to write his famous "Flora Carniolica," which was published in 8vo at Vienna, 1760, in which book it may be noted that he followed the Linnean classification. His entomology, "Entomologia Carniolica," published in Vienna, 1765, illustrated by some 40 odd engravings, was not a financial success, though it greatly increased his reputation. His interest in the subject of minerals was excited by seeing the extensive use made of mercury in the Styrian mines, and in 1771 his "Mineralogische Vorlesungen" was published at Vienna. Of medical writers he was one of the first to call attention to diseases incidental to industrial occupations. The removal of Jacquin to Vienna from Chemnitz left a vacancy for a mineralogist for the great Hungarian mines which Scopoli was called to fill, and in the year of his appointment, 1777, he published his "Fundamenta Chemiæ" at Prague. Soon afterwards he was appointed professor of natural history at Padua, which chair he occupied until his death in 1788.

I am, Sir, yours faithfully,

Dublin, June 12th, 1915. GEORGE FOY.

THE LATE LORD ROBERTS ON THE TREATING OF SOLDIERS.

A FEW days ago a soldier arrested for drunkenness in London gave as his explanation that he had returned from the front wounded and that a lady had treated him to a bottle of whisky. Now, this is not the way to welcome returned soldiers, and we would redirect attention to the letter from the late Lord Roberts published in THE LANCET of Nov. 10th, 1900, in which he said: "Will you kindly allow me, through the medium of your paper, to make an appeal to my countrymen and women upon a subject I have much at heart and which has been occupying my thoughts for some time past. All classes in the United Kingdom have shown such a keen interest in the army serving in South Africa, and have been so munificent in their efforts to supply every need of that army, that I feel sure they must be eagerly looking forward to its return and to giving our brave soldiers and sailors the hearty welcome they so well deserve when they get back to their native land. It is about the character of this welcome and the effect it may have on the reputations of the troops whom I have been so proud to command that I am anxious and that I venture to express an opinion. My sincere hope is that the welcome may not take the form of 'treating' the men to stimulants in public-houses or in the streets, and thus lead them into excesses which must tend to degrade those whom the nation delights to honour, and to lower the 'soldier of the Queen' in the eyes of the world—that world which has watched with undisguised admiration the grand work they have performed for their sovereign and their country. From the very kindness of their hearts, their innate politeness, and their gratitude for the welcome accorded them, it will be difficult for the men to refuse what is offered to them by their too generous friends. I therefore beg earnestly that the British public will refrain from tempting my gallant comrades, but will rather aid them to uphold the splendid reputation they have won for the Imperial army."

Lord Roberts's warning seems to be urgently needed at the present juncture.

THE NATIONAL CLEAN MILK SOCIETY.

THE aims of this society are to raise the hygienic standard of milk and milk products, and to educate the public in regard to the importance of securing a clean and wholesome milk-supply. Plans are now being decided upon by the council for a clean milk and infants' welfare station to be established in one of the poorest quarters of London, where clean milk can be sold to the poor, and where mothers can be educated in the care of their babies on lines similar to those that have proved useful in New York. The movement will have medical approval, and we should be glad to see it develop, rapidly and successfully, all over the country. Money, of course, is needed to carry on this important hygienic work, and the council, which is a strong one, containing several well-known leaders of our profession, appeal to the public to support the movement by becoming members of the society. Communications should be addressed to the secretary, 2, Soho-square, London, W.

THE OPEN-AIR TREATMENT OF THE WOUNDED.

UNDER the title of "The Open-air Treatment of the Wounded," Dr. A. E. Shipley, F.R.S., Master of Christ's College, Cambridge, has written a description of the First Eastern General Hospital, Cambridge, for the *Country Life* Library. The book is an eloquent plea for fresh air in the treatment of disease, and the remarkable statement is made that this form of treatment reduces the expense per bed from £200 to £16. In a footnote Lord Knutsford says that Dr. Shipley's estimate of £200 per bed for an ordinary hospital is too low, £300 to £400 being nearer the truth in a London hospital. Professor W. J. R. Simpson, C.M.G., in a chapter on open-air treatment, gives the number of patients who have passed through the Cambridge Hospital as 6600, with a death-rate of only 4·6 per

1000. Of 60 cases of pneumonia that have been treated in the hospital, 95 per cent. have recovered. The book, which is well illustrated, is published by the proprietors of *Country Life*, 20, Tavistock-street, Covent Garden, W.C., price 1s. net.

T. L. Cashel.—The various eponymous terms can all be found by reference to one of the medical dictionaries, of which there are several. The best of these, we regret to state, are of American origin.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY AND THURSDAY.—5 P.M., Croonian Lectures:—Surgeon-General Sir David Bruce, C.B: Trypanosomes causing Disease in Man and Domestic Animals in Central Africa. (Lectures II. and III.)

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patients (Mr. E. Gillespie). 2.30 P.M., Medical Out-patients (Dr. T. R. Whipham); Gynæcological Out-patients (Dr. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Surgical Operations (Mr. Carson). Clinics:—Medical Out patients (Dr. A. G. Auld); Surgical Out patients (Mr. Howell Evans); Nose, Throat, and Ear Out-patients (Mr. H. D. Gillies). Radiography (Dr. Metcalfe). 3.30 P.M., Medical In-patients (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2.30 P.M., Throat Operations (Mr. Gillies). Children Out-patients (Dr. T. R. Whipham); Eye Out-patients (Mr. R. P. Brooks); Skin Out-patients. 5.30 P.M., Eye Operations (Mr. R. P. Brooks).

THURSDAY.—2 30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patients (Dr. A. J. Whiting); Surgical Out-patients (Mr. Carson); Radiography (Dr. Metcalfe). 3 P.M., Medical In-patients (Dr. R. M. Leslie). 4.30 P.M., Clinical Demonstration:—Dr. A. E. Giles: Illustrative Gynœcological Operations.

FRIDAY.—2.30 P.M., Surgical Operations (Mr. Howell Evans). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. E. Gillespie); Eye Out-patients (Mr. R. P. Brooks).

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M. Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

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METEOROLOGICAL READINGS.

(Taken daily at 9.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 16th, 1915.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
June 10	29·900	E.	0 01	109	70	61	59	62	Raining
,, 11	30·100	N.E.	...	106	72	57	56	61	Cloudy
,, 12	30·256	S.E.	...	105	69	54	54	59	Fine
,, 13	30·220	N.E.	...	107	75	53	52	56	Cloudy
,, 14	30·230	N.E.	...	116	68	51	49	53	Cloudy
,, 15	30·220	N.E.	...	111	69	51	50	55	Cloudy
,, 16	30·184	N.E.	...	111	73	49	53	56	Fine

The following magazines, journals, &c., have been received:— Canadian Journal of Medicine and Surgery, Annali di Medicina Navale e Coloniale, Bulletin of the Johns Hopkins Hospital, Revista de la Asociación Médica Argentina, Surgery, Gynæcology, and Obstetrics, St. Thomas's Hospital Gazette, Medical Journal of Australia, Revista Médica del Uruguay, Modern Hospital, American Journal of the Medical Sciences, Proceedings of the Royal Society of Medicine, Maryland Medical Journal, Archives of Radiology and Electrotherapy, Tropical Medicine and Hygiene, &c.

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ON

TRYPANOSOMES

CAUSING DISEASE IN MAN AND DOMESTIC ANIMALS IN CENTRAL AFRICA.

Delivered before the Royal College of Physicians of London on June 17th, 22nd, 24th, and 29th, 1915,

By Sir DAVID BRUCE, C.B., F.R.S.,
M.B. Edin., F.R.C.P. Lond.,
SURGEON-GENERAL, A.M.S.

LECTURE I.

Delivered on June 17th.

Mr. President and Gentlemen,—I beg to thank you for the honour you have conferred in electing me Croonian lecturer for the present year. I am afraid the subject I have chosen will be found to be of little or no practical interest to the Fellows of this College, since it deals with a form of tropical disease which is seldom seen in England, and then, as a rule, only in hospitals devoted to the treatment of exotic diseases. The investigations into these diseases were also made from the standpoint of causation and prevention rather than treatment, a circumstance which must further lessen their interest to physicians engaged almost exclusively in the treatment of disease. But this is the subject which for some years has almost exclusively engaged my attention, and on account of the pressure of work caused by the war it would have been difficult or impossible to gather materials on any other subject. Further, I intend to confine myself in these lectures to a consideration of the trypanosomes causing disease in man and domestic animals in Central and Southern Africa, since it is only in Zululand, Uganda, and Nyasaland that I have had the opportunity of studying these parasites in the field and under natural conditions. The conditions, however, which obtain on the East and West Coasts of Africa between 20° N. and 30° S. latitude are much the same as those which are found in the central parts, and it is probable that the same trypanosome species are found throughout. So that in describing the species found in our own colonies it may be assumed that all the important pathological species found in Central Africa are being dealt with, although in other places they may be known by other names.

The central region—the tropical or equatorial—corresponds with the distribution of the tsetse flies, and the trypanosomes causing disease in this region are carried from sick to healthy animals by various species of this genus of flies. In the north of Africa, outside the range of the tsetse flies, two trypanosome diseases are found, one of the horse (dourine) and another of camels (surra), the former conveyed from sick to healthy horses by contagion, the latter almost certainly by large biting flies, the so-called horse flies, or tabanidæ. Now, in order to understand the wide distribution of these hæmatozoa, reference may be made to Fig. 1, a map of the world on which their distribution is shown.

Geographical Distribution.

It will be seen from the accompanying map that these blood parasites are found in most parts of the world, from South America through Africa, Southern Europe and Persia to India, Burma, China, and the Philippines. (Fig. 1.) In Africa is shown a broad equatorial band representing the trypanosome diseases carried by the tsetse flies. In it are represented, for example, the distribution of *Trypanosoma gambiense*, the cause of the ordinary or Congo sleeping sickness, and the distribution of *Trypanosoma brucei*, the cause of nagana in animals, and the Rhodesian and Nyasaland form of sleeping sickness or trypanosome disease in man. Further north out of the tsetse-fly region we have *Trypanosoma equiperdum*, the cause of dourine, which the map shows to be widely distributed in Europe also. *Trypanosoma evansi* or surra, which spreads out of Africa along the camel caravan routes into India and China, is also shown.

In this introduction it is unnecessary for me to give an early account of the history of these parasites, since this has often been done and can be found in most text-books; suffice it to say that the first trypanosomes were discovered some 70 years ago in the blood of fish and frogs. These were of interest to zoologists, but having no obvious bearing on the causation of disease did not attract the attention of medical men. Thirty years afterwards, in 1877, Surgeon Timothy Lewis, of the Army Medical Department, discovered in Bombay the trypanosome of the common rat, which was afterwards named after him—*Trypanosoma lewisi*. Three years later, in 1880, Dr. Evans, Chief of the Veterinary Staff in Madras, discovered what were supposed for a long time to be similar flagellates in the blood of horses suffering from surra. It is from these two discoveries that we must date the beginning of the study of trypanosome diseases.

Classification of the African Trypanosomes.

After these few introductory remarks, and in order to further clear the ground, allow me before proceeding to describe any of the individual species of African trypanosomes to briefly introduce them and to show into what groups or classification they can be thrown. In classifying them I have striven for simplicity, as it seems better for practical purposes to divide them into a few well-defined groups and species rather than to try with our present incomplete knowledge to subdivide them more minutely.

The three characters mainly relied upon in this classification of trypanosomes are, in the first place, their morphology; secondly, their pathogenic action on animals; and, thirdly, their mode of development in the tsetse flies.

At one time it was hoped that cultivation on artificial media might be used as an aid to classification, but up to the present this hope has been unfulfilled. Other methods, such as cross-inoculation experiments and serum diagnosis, I do not consider of much use in making a simple, workable, practicable classification such as will be found of use for diagnosis in the field. If we admit them into our methods the multiplication of species must proceed to an unmanageable degree.

1. *Morphology*.

To begin with the morphology, and this is of great importance in classification. The trypanosomes are first examined in a fresh living condition to ascertain their general appearance and kind of movement. There is a good deal of difference in the range of movement in different species. Whereas many vibrate about one spot, and show little power of wider movement, others are capable of hurling themselves from one point to another with great power and rapidity. But, of course, it is after the trypanosomes have been fixed and stained that their characteristics can be made out best. For example, the length and breadth of a fixed and stained trypanosome may be very useful in identifying it, and in addition to the length and breadth, a description of the contents of the cell, the nucleus, micronucleus, undulating membrane, and flagellum, may all help in the differentiation of species.

2. *Susceptibility of Animals.*

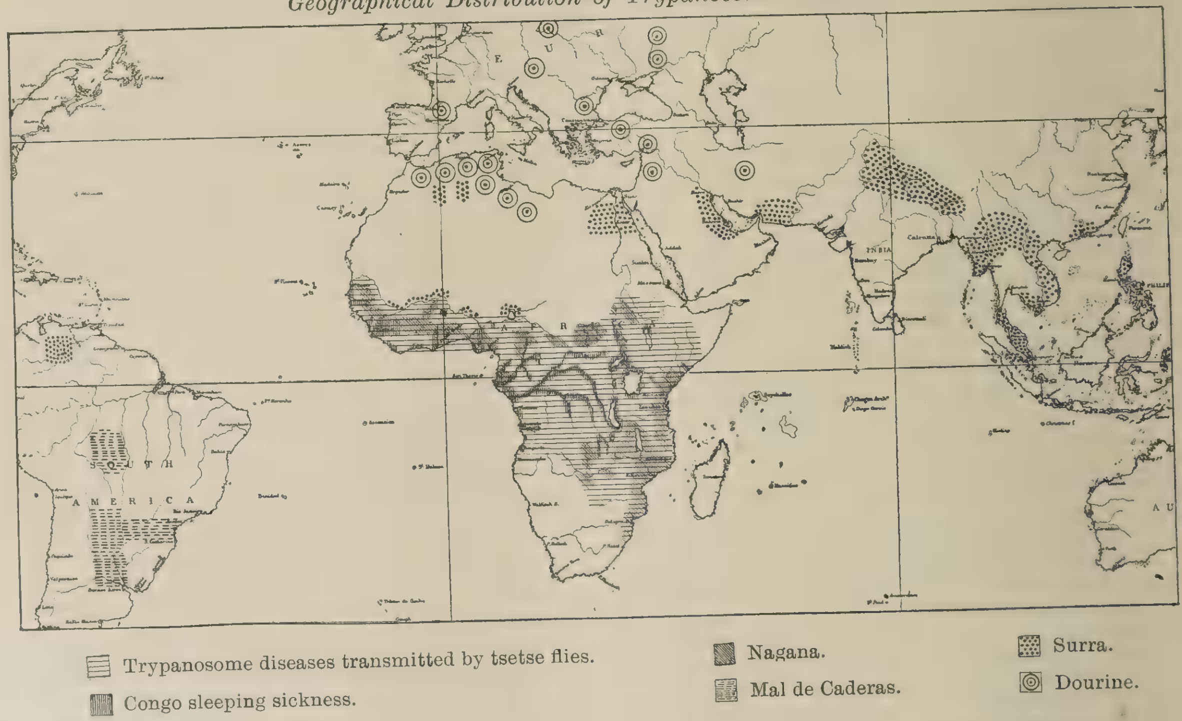
The second means at our disposal for the classification or differentiation of trypanosomes—namely, their pathogenic effect on various experimental animals—must be used with caution. For example, it is well known that their passage through a series of animals of the same species usually exalts their virulence towards that animal. For instance, the nagana parasite, after passage through white rats for many generations, kills the rats in as short a time as two days; whereas the naturally wild strain of nagana only kills the same animals on an average in 20 or 30 days. On the other hand, another species of trypanosome in its natural wild state kills monkeys in a few days. But if it is first passed through a goat, and the attempt is made to infect a monkey with the goat's blood, the experiment always fails. Passage through the goat has lowered the virulence of the parasite towards the monkey. But if a trypanosome is caught in its wild state, and straightway put through a series of experimental animals, the result is, in my opinion, of some use in differentiating species. For example, *Trypanosoma brucei* will be found to be much more virulent and kill off more quickly the various laboratory animals than *Trypanosoma gambiense*. Some trypanosomes are deadly to horses and cattle and harmless to other animals, such as dogs, monkeys, and rabbits, while others show a marked preference for some particular species of animal, such as the domestic pig.

3. *The Development in the Invertebrate Host.*

The third character of use in classification is the mode of development in the tsetse fly or invertebrate host. As already mentioned, all the pathogenic trypanosomes of man and his domestic animals found in Africa, with the exception of the two northern species, pass through a specific cycle of development in the tsetse flies, the mode of development in the tsetse flies is different for different species of trypanosomes, and this may be made use of in classification, and in truth is one of the best means at our disposal. It is not known whether the North African species are capable of developing in tsetse flies. It is possible that on account of disuse they have lost the faculty, if they ever had it. It would certainly be an interesting experiment to try to pass them through the "fly."

FIG. 1.

Geographical Distribution of Trypanosome Diseases.



E
U
R
A
R
INDIA
SOUTH
AMERICA
AU
▤ Trypanosome diseases transmitted by tsetse flies.
▥ Congo sleeping sickness.
▩ Nagana.
▦ Mal de Caderas.
▨ Surra.
◎ Dourine.

CLASSIFICATION INTO THREE GROUPS.

With these few preliminary remarks, let me now introduce the chief Central African pathogenic trypanosomes. They may be divided into three groups, and these are set out on the following scheme:—

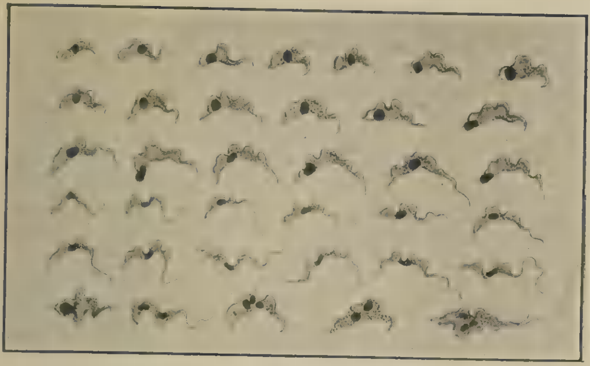
Group A. *Trypanosoma Brucei Group.*
1. Trypanosoma brucei.
2. Trypanosoma gambiense.
3. Trypanosoma evansi.
4. Trypanosoma equiperdum.

Group B. *Trypanosoma Pecorum Group.*
1. Trypanosoma pecorum.
2. Trypanosoma simiæ.

Group C. *Trypanosoma Vivax Group.*
1. Trypanosoma vivax.
2. Trypanosoma capræ.
3. Trypanosoma uniforme.

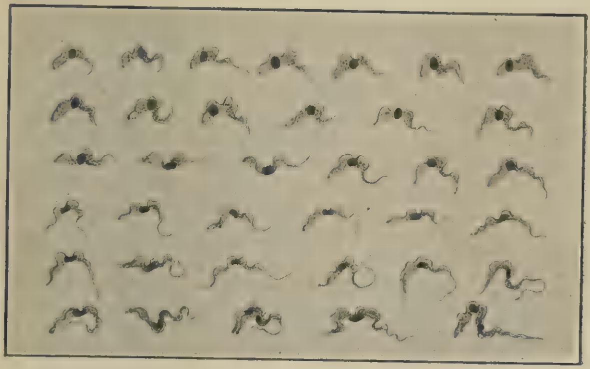
These names probably represent most of the principal pathogenic trypanosomes discovered up

FIG. 2.



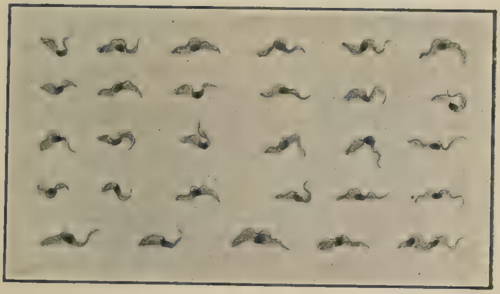
Trypanosoma brucei (Plimmer and Bradford). Zululand, 1913. × about 700.

FIG. 3.



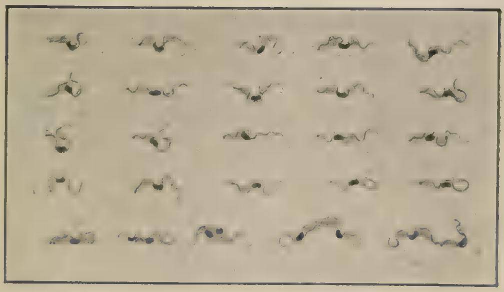
Trypanosoma gambiense (Dutton). Tanganyika, 1913. × about 700.

FIG. 4.



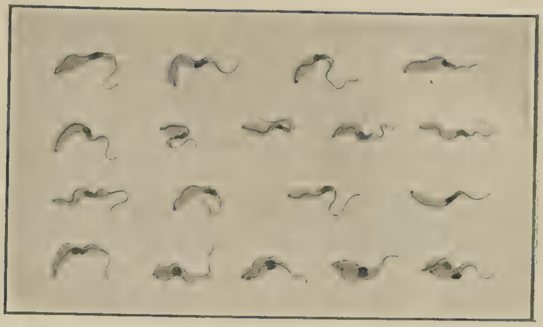
Trypanosoma pecorum. × about 700.

FIG. 5.



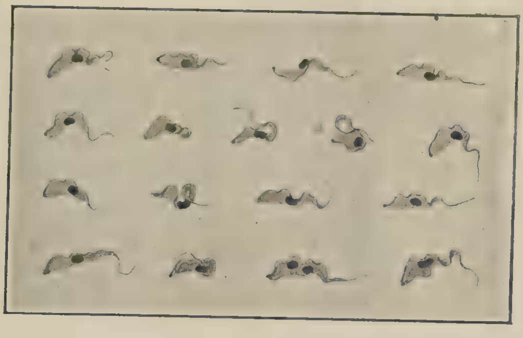
Trypanosoma simiæ. × about 700.

FIG. 6.



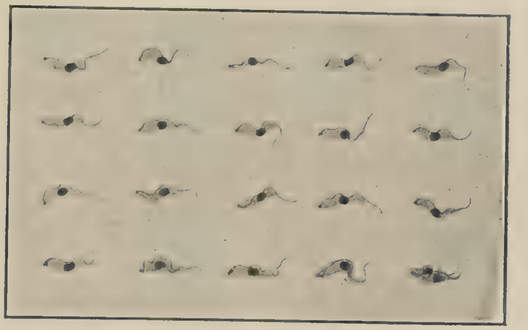
Trypanosoma vivax (Ziemann). × about 700.

FIG. 7.



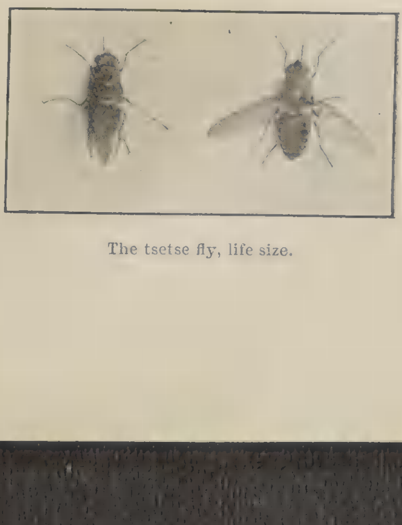
Trypanosoma capræ (Kleine). × about 700.

FIG. 8.



Trypanosoma uniforme. × about 700.

FIG. 9.



The tsetse fly, life size.

to the present time in Central Africa. For the sake of completeness I have placed the Northern species, *Trypanosoma evansi* and *Trypanosoma equiperdum*, in the first group, as they seem by morphology and their action on animals to belong there. Each group is distinguishable or separable by well-defined characters.

Group A. The Trypanosoma brucei group.—The species forming this group (Figs. 2 and 3) are all more or less polymorphic, varying in size and shape from short and stumpy forms without free flagella to long and slender forms with free flagella. The cytoplasm contains numerous dark-staining granules. The micronucleus or kinetonucleus is small, and is situated as a rule some distance from the posterior extremity. The undulating membrane is well developed and thrown into bold folds.

In regard to their action on animals, the members of this group may be said generally to affect many different species of animals—as, for example, man, horses, cattle, dogs, and most of the smaller experimental animals. The two Central African members of the group, *Trypanosoma brucei* and *Trypanosoma gambiense*, develop in the tsetse flies in the same way. At first the development takes place in the intestine; afterwards the parasites pass into the salivary glands, by way probably of the proboscis, and there complete their development into infective forms. This is the only group in which the salivary glands are invaded. This group can be separated from the other groups by shape alone.

Group B. The Trypanosoma pecorum group.—The trypanosomes are small and monomorphic. The cytoplasm is non-granular. The micronucleus is prominent, subterminal, and often seems to project beyond the margin. The undulating membrane is fairly well developed. (Figs. 4 and 5.)

The cycle of development in the tsetse fly in Group B begins in the intestinal tract; afterwards the flagellates pass forward into the proboscis of the fly, and finally reach the salivary duct or hypopharynx, where they complete their development and become infective. The difference between Group A and Group B is that in the latter the salivary glands are never invaded. There are only two species at present included in this group—*Trypanosoma pecorum* and *Trypanosoma simiæ*. The former gives rise to the most important trypanosome disease of cattle in Africa, while the latter is remarkable for the rapidity with which it kills the domestic pig.

Group C. The Trypanosoma vivax group.—The species making up this group (Figs. 6, 7, 8) are monomorphic, and remarkable for the extreme rapidity of their movements. The posterior extremity is enlarged. The cytoplasm is clear and hyaline. The micronucleus is large and terminal, and the undulating membrane is little developed and simple. This species only affects horses, cattle, goats, and sheep. Monkeys, dogs, rabbits, guinea-pigs, and rats are refractory.

The cycle of development in Group C differs from that in Groups A and B in that it takes place at first only in the labial cavity of the proboscis, and later in the salivary duct or hypopharynx. (Fig. 10.) No part of the cycle takes place in the intestinal tract or in the salivary glands.

These three groups are well marked, and it is fairly easy by microscopic examination alone to name what group a trypanosome belongs to, when seen in the blood of the vertebrate host or even in the tsetse fly.

DESCRIPTION OF THE TSETSE FLIES.

General characters.—The insects (Fig. 9) are dull-coloured, ordinary-looking flies about half an inch in length. The strong proboscis stands out horizontally in front. The wings are long and closed over each other, like the blades of a pair of scissors, when the fly is at rest. The dorsal aspect of the abdomen is marked by five more or less distinct transverse bands.

FIG. 10, A.

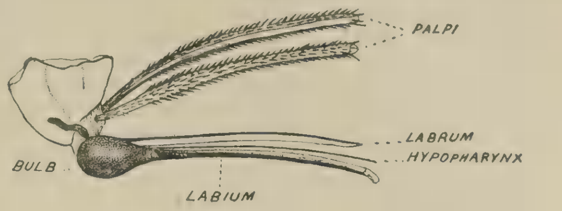
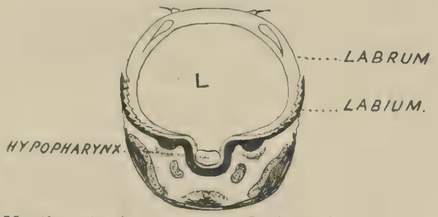


FIG. 10, B.



Mouth parts of tsetse fly. L, Indicates labial cavity.

It is important to understand the structure of the proboscis, as this plays an important part in the development of Groups B and C. In Fig. 10 a side view and a transverse section of the mouth parts are given. In the side view the mouth parts—the labrum, the labium, and the hypopharynx or terminal duct of the salivary glands—are separated. This is done by slipping the point of a fine needle between them at the base and running it towards the tip. This separates the labrum from the labium, and, as a rule, the hypopharynx springs up from the hollow of the labium and appears between the two parts as an extremely delicate transparent tube.

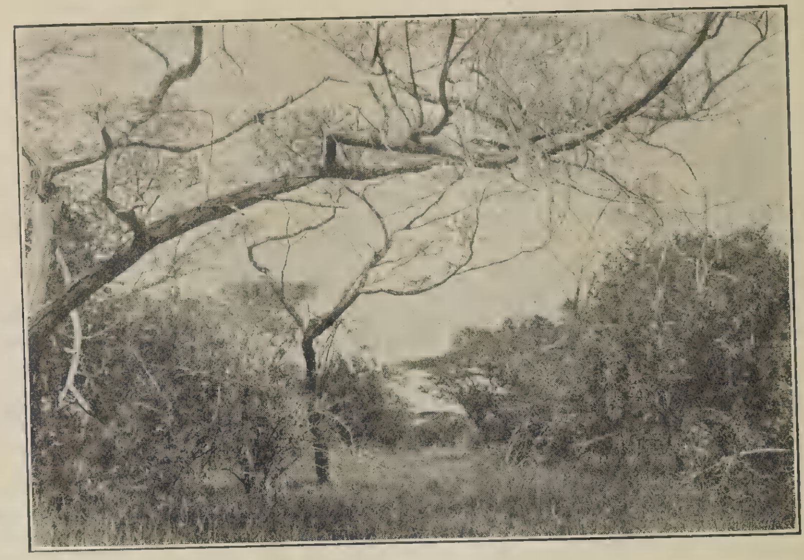
In the transverse section the parts are seen in position, the labrum and labium joined together form a tube through which the blood is drawn in the act of sucking, and known as the labial cavity; and the delicate terminal duct of the salivary glands or hypopharynx lying in the hollow of the labium, and opening near the tip of the proboscis. The salivary glands are long convoluted organs lying chiefly in the abdominal segment of the fly.

When I arrived in Zululand in 1894 there was only one known species of tsetse fly—*Glossina morsitans*. At the present time some 14 or more different species have been named. These are divided into four groups by Austen: The *Glossina palpalis* group; the *Glossina morsitans* group; the *Glossina fusca* group; and the *Glossina brevipalpis* group. For our purpose it will be sufficient to describe the principal species from the first two groups, *Glossina morsitans*, the carrier of *Trypanosoma brucei*, and *Glossina palpalis*, the carrier of *Trypanosoma gambiense*. But I may mention here that probably all the tsetse flies are capable of acting as carriers of all the pathogenic trypanosomes, at least in laboratory experiments. What makes one species of fly the especial carrier of a particular trypanosome is probably bound up in the natural history, the habits, and distribution of the fly.

Habitat.—This is the species made familiar by writings of travellers like Livingstone and hunters like Gordon Cumming. Until a few years ago it was the only species of which the habits had been studied, and when the word tsetse was used it was this species which was meant. Its habitat is the dry, thorny scrub which covers large areas of tropical Africa. (Fig. 11.) It is not found along the banks of lakes or rivers, and, in fact, seems to have a distaste for water. It requires shade, however, and is never found on open plains where it would be exposed to the tropical sun. In the "fly country" there are thickets, undergrowth, and trees which supply the requisite shade.

Habits.—These flies begin to bite soon after sunrise if the day is fine, but usually disappear during the hottest hours, coming out again towards evening when it becomes cooler. About sunset they are often particularly active. Moving objects such as a motor cycle seem to attract them greatly, and the cyclist is often surrounded by a cloud of them attacking him like an angry swarm of bees. Under these circumstances there is often a great disparity in the numbers of the sexes, the males predominating. This is probably due to the males attaching themselves to a moving object in order to mate with the females, which are attracted by the same movement, and come out of their cover to feed. Tsetse flies are very sensitive to weather conditions. If it rains or blows they usually remain hidden. They diminish in numbers during the dry season, and are most numerous towards the end of the rains.

FIG. 11.



Habitat of *Glossina morsitans*.

Food.—In regard to the food of *Glossina morsitans*, in one experiment 500 flies were caught in the sleeping sickness area of Nyasaland, and examined as to the contents of their intestines. It was found that 288 (or 57·6 per cent.) contained mammalian blood in a recognisable state. Measurements of these were made and the small type of blood cell was found to predominate, such as occur in the hartebeeste, waterbuck, and other antelope. In only three cases were nucleated red blood corpuscles found. From this experiment it appears, at least in that district, that the principal food of *Glossina morsitans* is the blood of antelope. Tsetse flies never suck the juices of fruits or vegetables, as is usual in the case of other biting flies such as mosquitoes.

The question is sometimes asked as to how often tsetse flies feed under natural conditions. From experiments with flies in the laboratory it was found that blood is recognisable in stained specimens for two and even three days after a feed, but not beyond the third day. This means, roughly, that half the 500 flies examined had fed within at most three days of their capture; it results that flies feed under natural conditions once in five or six days.

It is rather an interesting point as to whether these flies could maintain an existence on the smaller mammals and birds if the big game disappeared. They are quite ready to feed on the smaller animals, but most of these, such as monkeys, shrews, the mongoose, and rats, are usually too quick and snap up the fly before it has had time to feed. Another curious fact seems to be that when rinderpest sweeps through a country the tsetse flies disappear with the game and only return when the game has again multiplied to a fair extent. The curious point is that by no means all the game is killed off by the rinderpest; there is usually some species left which one would think would suffice to keep numbers of flies in food. It was thought at one time that this mortality among the flies might be due to some poisonous quality in rinderpest blood, but when flies were fed on rinderpest animals nothing untoward happened.

Act of feeding.—In regard to the act of feeding, this is done as a rule very rapidly, the fly fully distending itself in from half a minute to a minute after it has punctured the skin.

Reproduction.—Lastly, we come to the most important function of the tsetse flies, that of reproduction. The genus *glossina* is distinguished from most of the other diptera in being pupiparous. The female produces a single whitish or yellowish-coloured larva about once in ten days. This is retained in the oviduct until it is fully grown. As soon as the larva is born it creeps at once into the soil or into a crack in the earth, or among leaves and débris, and within a few hours has changed into a hard black puparium. As to how long the pupa remains quiescent depends mainly on the temperature. At a temperature of 85° F. the fly will emerge in 23 days, at 70° in 35 days, and at 65° in about 60 days. These larvæ are deposited all over the "fly" country, but there are certain positions and conditions which are favoured. The female usually chooses a spot with plenty of shade. A favourite site for her to take up her abode is on the under-surface of a tree which has fallen, and which remains at places some inches above the ground. Another condition is that the breeding place is near a native path or a game path. This may be to enable the mother to procure her food easily, or it may be some instinct in favour of the offspring which enables the newly emerged fly to obtain a feed within 24 hours of birth.

Glossina Palpalis.

This is also a widely distributed species. It ranges on the west coast from the Senegal river —16° N. latitude—to Angola. It extends eastwards into the Bahr el Ghazal. The eastern boundary of the species follows the valley of the Nile, the eastern shores of Lake Victoria and Lake Tanganyika. From the south end of the latter lake the boundary follows the frontier between the Congo Free State and Rhodesia in a south-westerly direction to Angola.

Habitat.—This species differs from *Glossina morsitans* in being a lover of water. It frequents the edges of lakes and rivers where there is clear water and plenty of shade; this shade consists of thick jungle with high trees and dense undergrowth, which grows to within a few feet or yards of the water's edge. This tsetse fly is never found on open beaches backed by grass plains, even although there may be some low scrub near the water. It is not found in reed beds or papyrus swamps, and as most of the Uganda river valleys are choked with reeds it follows that the tsetse fly does not ascend these rivers. In short, it is never found away from water, except in cases where it has followed man or animals for a mile or so for the purpose of feeding. In this way it is brought much more in contact with man than *Glossina morsitans*, which is a dweller in desert places, the haunt of wild animals. *Glossina palpalis* is a frequenter of watering places, on lakes and rivers, or water-holes in the bush, where the natives come for water, and where as a rule, on account of the density of the human population, there is little game.

Habits.—*Glossina palpalis* has the same habit of biting by daylight as *Glossina morsitans*. It is not seen until the sun is up. If it is a fine morning they may be active as early as seven or half-past seven. On dark shady spots on the lake shore they do not become troublesome until about ten o'clock when the sun is well up. In cloudy or windy weather few flies are abroad. They have a rapid flight and suddenly and silently flop on to the skin, causing so little sensation that the sharp stab of the proboscis is often the first thing felt. Sometimes they insert the proboscis so painlessly that attention is not drawn to the spot. As a rule little or no irritation follows the bite, no itching or swelling or reddening of the skin. But if there have been many bites about the same place there is often a good deal of swelling, induration, redness, and irritation which last for several days, and as is natural some individuals are much more affected than others.

Feeding.—As in *Glossina morsitans* the time taken by the fly in filling itself with blood is short. Stuhlmann weighed the flies before and after feeding and found that the males took in one and a half times their own weight in blood, and the females sometimes as much as two and a half times.

Food.—Under ordinary circumstances in populous districts it may be assumed that man supplies most of the food of this fly, and it is considered by some that it thrives better on human blood than on any other. In captivity, however, it feeds readily on any warm-blooded animal, especially on birds, and if hungry may even be induced to feed on cold-blooded animals, such as the lizard or frog. But in the absence of man it may be remarked that as this species is a dweller on the banks of rivers and lakes, it comes much more in contact with large birds—cormorants and other water-fowl—and reptiles—crocodiles and monitors—than does *Glossina morsitans*. In Uganda before the natives were removed from the lake shore and islands doubtless they formed the chief supply of blood for the fly. On the other hand, after the natives had been removed inland or in places where there was no native population the fly had to adapt its diet to the available supply. One experiment made by us in Uganda in such a place showed that only 17 per cent. of the flies had fed on mammalian blood and 83 per cent. on avian or reptilian, and as far as could be made out twice as many of the flies had fed on reptiles as on birds. In such places the large lizard or monitor seems to be a favourite dish with this species.

Reproduction.—I need not go fully into the reproduction of *Glossina palpalis* as the process is the same as in *Glossina morsitans*. One point may be mentioned, however, and that is that in Uganda the former has a marked predilection for certain breeding grounds; these are sandy beaches along the lake shore backed by a belt of vegetation. The breeding grounds on Damba Island, for example, where some thousands of pupæ were collected every month for the laboratory, are formed of coarse sand and pebbles. It is 4 or 5 feet above the level of the lake, and the bush comes to within a few yards of the water's edge. The pupæ are found as a rule an inch or two below the surface of the sand at or near the edge of the belt of vegetation. For a long time we failed to find any wild pupæ, although days were spent in turning over soil and decaying vegetable matter in those places where the fly most abounds. At last their breeding haunts were discovered by Captain A. D. Fraser, R.A.M.C., to be in patches of sand at the edge of the lake. After this secret was discovered there was no lack. Our natives found them in large numbers. One day they brought up as many as 7000, and as I had promised a cent for each pupa brought up to the laboratory I had to pay out nearly £5 for them. These wild pupæ proved to be much healthier than those obtained from flies in captivity. The flies bred from pupæ born in the laboratory rarely showed any marked vitality; on the other hand, the flies hatched out from the wild pupæ found on the lake shore were fairly strong and vigorous, and lived in captivity for a couple of months or more. In conducting experiments with flies it is very necessary to work with laboratory bred ones, as the wild flies may be naturally infected with several species of trypanosomes. Numerous experiments went to show that there is no hereditary transmission of trypanosomes in tsetse flies, and there is no reason to believe that flies become infected by contact with infected flies or from fouled cages. Any trypanosomes found in laboratory bred flies may therefore be considered to be derived from the infected animal they were fed upon.

It will be seen from the foregoing that the two principal groups of tsetse flies—the *Glossina morsitans* group and the *Glossina palpalis* group—differ from each other in well-marked characters, the former living in wild, unpopulated districts and trusting to the wild game for their food, the latter along rivers and lakes which are usually thickly populated and trusting to man for a food supply, or in his absence living on the large reptiles, birds, and antelopes which frequent these places.

LENGTH OF LIFE OF TSETSE FLIES.

One word more in regard to the duration of life of tsetse flies. This is an important question, but one difficult to answer. The importance comes in when we have to consider how long a place may remain dangerous from the presence of infected flies. I remember at a meeting of the Royal Society when the question came up that the late Lord Avebury said he did not see any reason why a tsetse fly should not live for years. He had himself known an ant to live in captivity for some 15 years. Carpenter tried to solve the question by marking large numbers in a given spot and finding out how long the marked flies could be recaptured. One male was caught 199 days after it had been marked. Kleine states that he kept a fly in captivity for 227 days. If we put the life of the fly, then, at anything up to a year we may not be far out.

I have now given a sketch of the principal pathogenic trypanosomes in Central Africa, and also of their carriers, the tsetse flies. In my next lecture I shall proceed to describe more in detail the individual species of trypanosomes, beginning with that one which causes nagana.

THE USE OF MAGNESIUM SULPHATE IN THE TREATMENT OF TETANUS:

WITH AN ACCOUNT OF A SIMPLE APPARATUS FOR PHARYNGEAL INSUFFLATION.

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TETANUS, a frequent complication of the wounded in the present war, is a frightful disease. Horrible spasms torture fully conscious victims. Furthermore, it is the spasms which, at least in most cases, cause the fatal issue, by profoundly affecting the functions of respiration and circulation. Accordingly, a treatment which may offer nothing more than relief from these spasms ought to be of considerable importance.

The various experiences accumulated in the last nine years with the use of magnesium sulphate in sporadic cases of tetanus have established beyond a doubt that the spasms of tetanus can be relieved by the use of this remedy to a much greater extent than by any other method of treatment. Furthermore, in many cases of tetanus magnesium sulphate proved to be directly a life-saving remedy. Similar results were obtained with the use of Epsom salts in the extensive experience in the present war. However, by a study of the present numerous brief communications on this subject I became convinced that there is great necessity for a better understanding of the principles underlying this method of treatment, the various methods of administration and their indications, the possible danger due to the use of the magnesium salts, and the means for combating this danger. On the basis of an extensive experimental experience and a study of the clinical literature I formulated definite opinions regarding these various points, which I shall state here as briefly as possible, having in mind exclusively the practical side of our subject.

There are four ways for the administration of magnesium sulphate, each of which has a special action and consequently a special indication. They are: (1) Subcutaneous injection; (2) intramuscular injection, combined with inhalation of ether; (3) intravenous injection; and (4) intraspinal injection. Except for the intravenous injection, the magnesium salt ($MgSO_4 + 7\,H_2O$) shall be given in a 25 per cent. (molecular) solution. In sterilising the solution it must be kept in mind that if evaporation be allowed and not refilled with sterile water, the solution will be much more concentrated and the patient will therefore receive more of the salt. The injections should be made aseptically, or at least antiseptically.

1. *Subcutaneous injections.*—The dose should not be more than 2 c.c. and not less than 1·2 c.c. of the solution (25 per cent.) per kilogramme of body weight, to be injected four times in 24 hours. No massage. Light etherisation or a morphinisation should precede the injection of magnesium.

2. *Intramuscular injection and inhalation of ether.*—It is based upon the finding by Auer and myself that a moderate inhalation of ether increased considerably the efficiency of magnesium salts. Chloroform does not exert such an effect. The patient should be fairly well etherised, and 2 c.c. of a solution of magnesium sulphate (25 per cent.) per kilogramme of body weight be injected into the muscles of the thigh. At the end of the injection the thigh should be massaged and the ether anæsthesia continued lightly for about 20 minutes longer.

3. *Intravenous injections.*—The concentration of the solution should be about 3 per cent. (isotonic), and not more than 5 c.c. per minute should be permitted to run into the vein.

4. *Intraspinal injection.*—The dose to be injected, at the usual place of the lumbar region, should be 1 c.c. (of a 25 per cent. solution) for every 10 kilogrammes of body weight.

Subcutaneous injections exert their effects slowly. They cannot relieve immediately severe or dangerous spasms, but they exert undoubtedly a beneficent effect by cumulative action. Under their influence the spasms gradually become milder and less frequent, and the patient may eventually recover. Subcutaneous injections should be begun as soon as initial symptoms set in (local tetanus, slight trismus, &c.) and be continued throughout the disease. (In very young infants the dose should not exceed 0·8 c.c. per kilogramme of body weight.)

Intramuscular injections plus ether may relieve greatly even severe spasms in less than half an hour, but the beneficial effect is liable to pass off completely after two or three hours. On account of the local reaction which they produce the injections should not be repeated too frequently, and the method ought not to be used as a routine treatment. However, on account of the simplicity of the procedure it may be resorted to in severe spasms when for some reason other methods which are capable of exercising a rapid effect are not practicable.

Intravenous injections are capable of relieving dangerous effects of the spasms (tetanus of the diaphragm, constriction of the larynx) more promptly than any other method of application. But the beneficial effect may completely disappear in less than 30 minutes. Besides, by the use of this method the circulation may become affected also—by the direct action upon the myocardium. The use of this method of injection should therefore be reserved for emergency cases only, when quick action is urgently desired. Pulse and respiration should be guarded during the infusion of the solution; when the pulse shows softness or intermittence, or the respirations show shallowness, the infusion should be at once discontinued. Fortunately the ill-effects, if not permitted to continue too long, disappear quite soon after the infusion is discontinued.

Intraspinal injections may begin to show a definite relief from the spasms in less than half an hour after the injection, and after one hour the relaxation may be complete. The extent as well as the duration of the relief afforded to the patient is greater when the magnesium solution is given by the intraspinal method than by any other method of administration; the relief may last between 12 and 30 hours.

There is a fundamental difference in the mode of action between the intraspinal method and the other three methods of injection. The first acts by local application of the magnesium salts to the hyper-irritable parts of the central nervous system, requires only a small quantity of the solution, and the effect lasts a fairly long time. The other three methods of injection act through the circulation, require much larger doses, and the effect is either moderate and slow in its appearance or is of short duration. There is still another significant difference. The ill-effects upon the respiration caused by injections through the circulation are accessible to a fairly rapid correction by injections of calcium chloride and physostigmine (which will be discussed presently), while these injections have apparently no such beneficial neutralising effects when the respiratory paralysis has been brought about by an intraspinal injection of the magnesium solution.

As stated before, practically the only danger which may arise from an injection of an overdose of magnesium sulphate consists in a paralysis of the respiration. The paralysis is temporary, and when brought about by the administration through the circulation is readily reversible. In many instances an injection of 1·5 milligramme of physostigmine improves the respiration without interfering with the relaxation of the patient. A more reliable reversing effect is obtainable by an injection of calcium chloride. It may be given intramuscularly—30 or 40 c.c. of a 2 per cent. solution. By this method, which has the advantage of simplicity of procedure, the resuscitating action may not be as rapid as desirable; furthermore, it may at times bring back also the spasms, which is surely an undesirable result. The calcium chloride may be administered intravenously in a very dilute solution (0·2 $CaCl_2$ + 0·6 $NaCl$ to 1000 of H_2O) injected slowly. As soon as an efficient spontaneous respiration is restored, which may occur in less than one minute, the infusion should be discontinued.

When the magnesium solution is given intraspinally in a dose of 1 c.c. (25 per cent.) for 10 kilogrammes of body weight to adults, as a rule nothing happens to the respiration. But if the respiration should exceptionally become shallow and slow, the first thing to do is to insert a needle in the spinal canal and let some of the fluid run out and then wash out the canal several times by a warm saline or Ringer solution. This should not be done when a reliable device for artificial respiration is at hand; the spontaneous respiration will return later without this aid, which has the disadvantage that it shortens the period of relief from the spasms.

I consider the pharyngeal insufflation as devised by me and described at the end of this paper, as a most reliable method of artificial respiration in man. Whenever possible, this apparatus should be at hand when a case of tetanus is to be treated. If this is not at hand respiratory paralysis should be treated by inserting a catheter through a tracheotomy wound deep into the trachea, which is to be connected with an oxygen tank. The catheter should be of a size which would fill out about two-thirds of the lumen of the trachea. The oxygen stream should be interrupted a few times in a minute for two or three seconds.

To summarise briefly. Any case of tetanus, mild or severe, should from the start to finish be treated by subcutaneous injections about every six hours with doses of magnesium sulphate as described before. Cases having severe attacks should receive in addition an intraspinal injection. This may be repeated when necessary, but the subsequent doses should be slightly smaller than the preceding ones. If the attack contains an element of immediate danger an intravenous injection may be administered as described above. When for one reason or another the intraspinal and intravenous injections are not practicable the intramuscular injection plus ether anæsthesia may be resorted to. When treating tetanus by magnesium sulphate preparations for artificial respiration ought to be made in order to be able to use efficient doses of the salt. The pharyngeal insufflation device is the simplest and most reliable method for this purpose. When this device is not at hand, then oxygen should be administered by the method of intratracheal insufflation through the tracheotomy wound. The treatment of the failing respiration should be begun at an early stage; asphyxia of the tissues would thus be avoided and a complete restoration could be attained early. The treatment of tetanus by magnesium does, of course, not exclude its serum treatment.

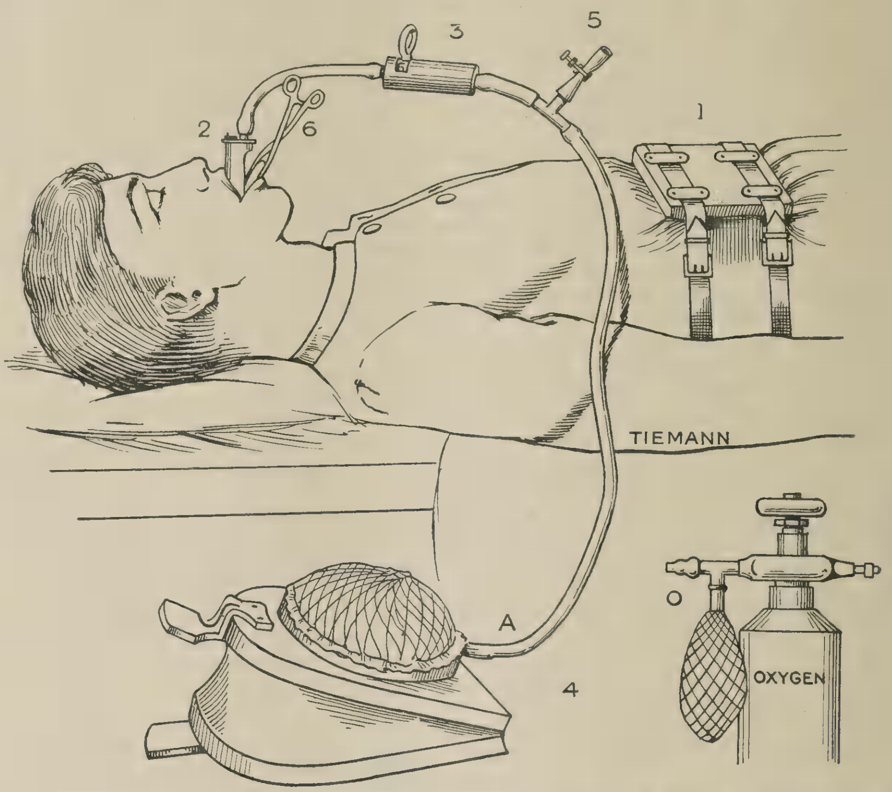
It ought to be borne in mind that unavoidably cases of tetanus will be met with which no method of treatment could cure, either on account of the presence of great amounts of toxin, fixed and free, or on account of the presence of several undiscoverable foci containing living bacilli. The failure to cure such cases should not militate against any method of treatment.

A SIMPLE APPARATUS FOR PHARYNGEAL INSUFFLATION AS A RELIABLE METHOD FOR ARTIFICIAL RESPIRATION IN CASES OF EMERGENCY.

The occurrence of paralysis of respiration after intraspinal injections of too large a dose of magnesium sulphate has been the stimulus for looking for a reliable method of artificial respiration in human beings. It leads up, in the first place, to the now well-known method of intratracheal insufflation. This method, however, can at present be used only by experts and under favourable conditions. During the last few years, while serving on two Resuscitation Commissions, a method for artificial respiration has been developed by me which is easy to handle and reliable in its service. The principle of this method consists of blowing air into the pharynx. If this is done without further precautions, most of the insufflated air would escape through the mouth and through the nose, and would enter into the stomach. The prevention of the escape of air into the stomach is accomplished in our method in the first place by compressing the abdomen. The escape through the mouth and nose is readily prevented by blowing the air through a pharyngeal tube of a proper form and size. The insufflated air, or oxygen, enters therefore nearly exclusively into the lungs.

The mentioned apparatus consists, then, in the first place, of an appropriate pharyngeal tube (which will best be understood by seeing it in the apparatus) and a foot-bellows (or oxygen tank) which serve as a source for driving a continuous air stream into the pharynx. Between the foot-bellows and the pharyngeal tube a "respiratory valve" is introduced which regulates the inspiration and expiration by turning a ring with the thumb from side to side; when turning to the right the air is driven into the lung; by turning it to the left the air from the bellows is cut off, and at the same time an opening is made in the tube through which the escape of the expiratory air is accomplished.

The expiration is carried out through the elasticity of the over-distended chest walls. Between the bellows and the respiratory valve a T-tube is interpolated, which is supplied with a screw clamp on the vertical branch. When the pharyngeal tube is first introduced the T-tube has to *remain widely open;* but immediately after beginning of working the bellows and the respiratory valve the screw clamp should gradually be narrowed down until the chest shows a proper heaving. The mentioned parts of the apparatus should be kept connected and ready for immediate action. Besides these parts, the apparatus contains also a wooden board with belts for the compression of the abdomen; a tongue forceps, some tape, and a stomach tube, to be used in a manner which will be mentioned later. All these parts are collected in a handy small bag. The details and the working of the apparatus are very simple and by seeing the latter the description will be readily understood.



Apparatus for artificial respiration by pharyngeal insufflation. 1. Abdominal pressure pad. 2. Pharyngeal tube. 3. Respiratory valve. 4. Foot-bellows. 5. T-tube with a screw clamp, interpolated between the respiratory valve and the foot-bellows. Pharyngeal tube, respiratory valve, T-tube and foot-bellows should be kept connected by means of good rubber tubing which does not kink. The apparatus will then be in readiness for immediate application. 6. Tongue forceps and tape (or gauze bandage) for tying the tongue to the pharyngeal tube.

Oxygen may be used by attaching the tube (A) to a cylinder of the compressed gas (O) in place of the bellows (4).

The order of procedure should be as follows: 1. The abdomen should be compressed by the small wooden board bearing belts. 2. The tongue should be pulled out by means of the tongue forceps. 3. The pharyngeal tube should be inserted as far back as the pharyngeal wall, with the lateral opening of the tube facing the entrance into the larynx. The tongue should then be fastened to the pharyngeal tube, but not too tight. By this means the entrance into the larynx is kept widely open, and the pharyngeal tube is kept safely in its proper place. The outer end of the pharyngeal tube should then be connected with the end of the respiratory valve which bears the lateral ring. The foot-bellows should be worked continuously, and the respiratory valve should be turned about 12 times per minute. The T-tube should be, as stated above, gradually compressed until a satisfactory heaving of the chest is established. The whole procedure of the establishment of the working of the artificial respiration need not last longer than one minute.

The anterior end of the pharyngeal tube bears an opening which is kept closed by means of a movable plate. Through this opening a stomach tube which fits into the hole can be pushed down until the fenestrated end of the tube is within the stomach. By the aid of this procedure all the air entering into the stomach may escape through this tube, and a very satisfactory artificial respiration may then be obtained even without the pressure upon the abdomen. (The rubber tubing connecting the various parts should be strong and not easily subject to kinking. When the source of pressure comes from an oxygen tank the T-tube should be interpolated between the respiratory valve and pharyngeal tube, to prevent waste of oxygen during expiration, while the rubber bag should be interpolated between the oxygen tank and the respiratory valve for the accumulation of the escaping oxygen during the period of expiration.)

The efficiency of this apparatus has been tested on a great number of animals of various species under complete paralysis from ether and curare without a single failure. It has also been tested in a completely paralysed human being with success. Furthermore, it has been tested in several human beings for the production of profound anæsthesia, and it proved to be absolutely satisfactory even in temporary suspension of respiration.

The pharyngeal insufflation apparatus for artificial respiration can be handled with ease by laymen after slight instruction.

The apparatus, which is made for me by Messrs. George Tiemann and Co., of New York, can be used, of course, for any other emergency case of paralysis of respiration. But it is here especially recommended to have such a reliable and easily handled apparatus on hand when magnesium sulphate is used for the relief of tetanus; then an efficient dose of the salts may be administered without the fear of the consequence of an accident of paralysis of respiration.

A CONTRIBUTION TO

THE STUDY OF THE ETIOLOGICAL FACTOR IN SO-CALLED CEREBRO-SPINAL FEVER.

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THE following paper, the gist of which has already been communicated to the Reading Pathological Society, is the result of observations made during the outbreak of cerebro-spinal fever in Reading. During this epidemic I have examined the cerebro-spinal fluids from about 70 cases, many of which I have seen in consultation with the patients' own medical attendants or on behalf of the Reading sanitary authority.

It has been my great regret that I have had to forego many valuable opportunities for research in relation to this disease. Owing to pressure of work, both military and civil, however, and want of adequate laboratory assistance, I have had my hands full to get through even the routine work. I offer this as an apology for the imperfections in my paper. I would further take this opportunity of saying that any hypothesis put forward by me is based on very scanty grounds, which at a more opportune time must later be carefully examined and amplified. It may then be found that my assumptions require considerable modification.

At the outbreak of this disease I believed, like many others, that the meningococcus of Weichselbaum was responsible for the disease, and, indeed, in every fluid which I have examined a Gram-negative diplococcus has been found and a positive diagnosis made. As has been the case with other workers, I soon noticed that other organisms were present in films made from the centrifuged deposit whose nature puzzled me, especially as in the few cases (five) in which I made cultures from the fluid growths were obtained of what were apparently typical meningococci. These unknown organisms were sometimes coccal in form and Gram-positive. Others were slender Gram-negative rods, while still others, stained by Gram, consisted of minute Gram-positive dots placed a short distance apart as if at either end of a short bacillus. The body of the bacillus was sometimes represented by a faint Gram-negative rod. As a rule this was absent and its apparent site was then represented by a thin streak slightly lighter than the surrounding film. Occasionally one could see masses of these which looked like débris with minute dots interspersed at more or less regular intervals. Occasionally also could be seen several of these dots placed in line at regular intervals from each other, suggesting that there might have been a fine filament connecting them.

With a view of obtaining organisms from the blood of cerebro-spinal cases I withdrew a few cubic centimetres of blood from the median basilic vein of 12 patients at various stages of the disease. The blood was citrated, at once placed in nutrient broth with a + 10 reaction, and incubated for several days. An interval of two or three hours elapsed between the sowing of the tubes and their arrival in the incubator. No growth, to the naked eye at least, took place in any. Subcultures were made on an egg-agar medium devised by workers at the Lister Institute, who kindly gave me the formula. No apparent colonies were grown on these, but owing to the somewhat greater opacity of this medium as compared with ordinary agar it is possible that very minute colonies were missed. This is the more likely as films made from certain of the incubated broth tubes revealed a few organisms more or less similar to what I have described as present in the cerebro-spinal fluid films. It is also possible that while the organisms may have been present in the blood they had not sufficient vitality to continue their existence in artificial media. For more elaborate attempts to recover the organisms seen in the spinal fluid I had no time.

On April 16th I was asked by Mr. E. G. March, of Reading, to see the following case in consultation with him.

CASE 1.—The patient, a young woman, consulted Mr. March on Dec. 14th, 1914, because of an oblong swelling over the extreme surface of the lower part of the left forearm. Naturally it was considered to be a ganglion. The patient showed no signs of tuberculous taint and, indeed, looked unusually strong and healthy. Later Mr. March ascertained that for two months previously to consulting him she had suffered from diarrhœa. On Jan. 4th, 1915, another swelling appeared on the forearm. This was burst subcutaneously under digital pressure. On Feb. 16th the patient took to bed with gastric symptoms. The abdomen at that time was distinctly distended and there was a good deal of flatulence. The temperature was 102° F. in the evening. The urine was of a mahogany colour, but beyond a fairly large amount of indican it contained nothing abnormal. About this time the breathing became rather short, and fluid appeared at the right base with signs of consolidation. The patient complained of pains in the legs and ankles and showed a pyæmic type of temperature. The right lung soon cleared up, but similar signs then appeared in the left lung. Mr. March suspected pus, the infective agent probably having entered through the intestinal tract. Meantime other "ganglia" appeared in various parts of the arms.

On April 17th I made a leucocyte count and found 20,000 leucocytes per c.mm. Of these, 73 per cent. were polymorphonuclear neutrophils. A suggestion was made that the condition was an infective one, and that in view of the history one of the so-called ganglia should be opened and the contents examined. On the 23rd a similar swelling appeared on the tongue. The temperature then dropped to normal, but the pulse remained quick. The ganglia were then opened under an anæsthetic and blood-stained pus was found in every one. I was present at the operation and planted on glucose-agar tubes some of the pus taken direct from the swellings. The leucocytes now numbered about 15,000 per c.mm. The subsequent history so far is that since the operation, now some weeks ago, she has suffered from slight sickness and recently has complained of marked giddiness on moving the head. Pain in the occipital region is marked.

The case was one apparently of pyæmia, with a history of preceding gastro-intestinal disturbance, followed by a prolonged illness, in the course of which we find a high relative and absolute increase in the polymorphs, together with headache, giddiness, and sickness in the later stages. There seems at first sight nothing very much out of the common here, and yet when I came to examine the pus, expecting to find one of the ordinary pyogenic organisms, I received my first surprise. Before referring further to the organism I shall only say that I kept it living by frequent subculture until I had more leisure to investigate it. The desire to make further investigation came with the appearance of the second case, which I shall now briefly describe.

CASE 2.—On May 11th a patient was admitted to the Royal Berks Hospital under Major G. S. Abram, R.A M.C. (T.), with a history that three days previously he was seized with severe persistent headache. There was no history of previous illness beyond the fact that for six years he had suffered from a discharge from the left ear. The temperature was 100·4° F., the pulse-rate 120 and regular, and the tongue was thickly furred. On examination of the ear a slight discharge was seen coming from a small perforation in the membrane; no mastoid pain; teeth very filthy. On the 15th the patient still complained of headache; the pupils were dilated but equal; and there was tenderness in the neck and shoulder, but none over the spine. He could bend his head freely on the chest. There was no Kernig sign. Cerebro-spinal meningitis was suspected, and about 25–30 c.c. of very clear fluid were allowed to escape by lumbar puncture. This was examined in the usual way by making films from the centrifuged deposit. Gram-negative diplococci were found, together with the other unknown forms above mentioned. He was given 15 c.c. of anti-meningococcal serum. On the 17th I withdrew a few cubic centimetres of blood from the median basilic vein, sowed them immediately in about 20 c.c. of ordinary + 10 broth, which was placed at once in the incubator. There was no apparent growth next day, and subcultures were made on 1 per cent. glucose agar. These remained apparently sterile. Subcultures on to fresh 1 per cent. glucose-agar tubes were made on each of the four following days. I kept subculturing because in films made from the broth organisms appeared to be present. On the sixth day I obtained a growth on the agar slope inoculated the day before and shall describe this organism further on. On the 18th there was a slight manifestation of Kernig's sign. The plantar response was flexor, but the knee-jerks were absent. On the 25th a slight systolic bruit was noticed. Next day four teeth-stumps were removed under cocaine. The leucocytes now numbered 15,000 per c.mm. On the 27th the patient became very delirious and attempted to get out of bed. A vaccine made from five different strains of meningococcus which I had isolated during this outbreak was injected. Next day a small dose of an autogenous vaccine made from the patient's own organism was given. On the 29th the abdomen became tumid and the patient rapidly became worse and died.

Post-mortem examination.—The brain and cord showed marked congestion of vessels in the meninges, with some opacity along the larger vessels; a layer of pus on the undersurface of the left temporo-sphenoidal lobe, which also contained a small abscess; and turbid fluid, but no excess in the ventricles. No abscess in the cerebellum. No definite pus in relation to the cord, which was very soft and congested. Skull: Advanced disease of the left middle ear with a perforation through the tegmen tympani, these parts being bathed in pus, while in the middle ear yellowish-white material of a cheesy consistency was found. Otherwise the bones of the skull were apparently normal. Heart: The pericardium contained a larger quantity than usual of turbid fluid. Ante-mortem clot was present in the right auricle. The tricuspid and mitral orifices admitted the tips of four fingers respectively. The myocardium was pale and friable. No vegetations were found. The coronary vessels were healthy, but slight atheromatous change was seen in the aorta in the neighbourhood of the coronary openings. The vessels otherwise apparently were healthy. The bronchial glands were enlarged, hæmorrhagic, and soft. There was a small amount of turbid fluid in each pleural cavity. No sign of tubercle. Small hæmorrhages were found all over the surface of the right lower lobe. In the left lower lobe was found a small whitish nodule which, on being incised, was found to contain pus. No signs of pneumonic consolidation. Abdomen: Liver pale and friable. The kidneys were pale and showed cloudy swelling. No enlargement of the cortex. No hæmorrhage into kidneys or suprarenals. The spleen was enlarged, weighing 1 lb. 6 oz.; no infarcts; no hæmorrhages, but the pulp was very soft and very diffluent. The stomach, small intestine, and appendix apparently were healthy. The colon was greatly distended and contained some light-coloured stools; the mucous membrane showed patches of congestion, but no hæmorrhages and no evident ulceration. Pancreas normal; lumbar and mesenteric glands enlarged; bladder and ureters normal. Muscles: There was a large hæmorrhage into the muscles of the abdominal wall immediately in front of the bladder, into the right iliacus and extending round to the muscles on the right outer side of the pelvis, causing pressure on the right sciatic nerve. The hæmorrhage was probably several days old. A similar but smaller hæmorrhage was found into the muscles of the abdominal wall near the left costal margin. The inguinal glands were enlarged, as also were the glands in the right axilla. These latter were also markedly hæmorrhagic.

The case was remarkable for the high temperatures reached during the illness, 105·8°, 106°, and 106·8° occurring several times, preceded by rigors. This patient during life showed signs and symptoms of cerebro-spinal meningitis, and a Gram-negative diplococcus was found in the cerebro-spinal fluid. Post mortem, however, a temporo-sphenoidal abscess with caries of the temporal bone was found, together with hæmorrhages into the muscles and evidence pointing to septicæmia, borne out by the recovery of an organism or organisms from the blood.

The first point I wish to make is that these two cases, though essentially very different in their history, are nevertheless due to the same infective agent. I am quite aware that the first case, until recently at any rate, never showed any symptom suggestive of cerebro-spinal infection, and that the second case, while showing symptoms of meningococcal infection, will be attributed by some to ordinary middle-ear disease, followed by an abscess in the brain, and I am well aware of the fallacy that may here enter into my argument. However, since completing the preliminary work for this paper, I thought it well to look up recent numbers of the medical journals, and I have received support—or so I think—from papers published on the etiology of the disease,[1] for, so far as I can gather, the organism which I shall now describe appears to be similar in many respects to that described in those papers.

The agar tubes inoculated with pus from the abscesses in Case 1 showed no growth for several days, but about the fourth or fifth day minute colonies were found on the agar. Films made several days later from these showed the most extraordinary diversity of form—club-shaped, pear-shaped, point of exclamation-like, Gram-positive bacilli; small diplobacilli resembling Hoffmann's bacillus; and Gram-positive cocci occurring in pairs or singly with occasional Gram-negative rods and cocci. In addition to these could be seen the small black dots already referred to. Films made from the pus direct showed practically all these forms, the club-shaped bodies apparently having a Gram-negative tail. These cultures were simply kept going for further investigation when Case 2 turned up. I have already described the steps taken to obtain a growth from this case and was surprised to find that the colonies were similar to those of Case 1 when they appeared first. On making films from these I was at once struck by the general resemblance of the organisms to those isolated from Case 1. There were slight differences which I shall describe further on.

Cultural characters.—Owing to the extreme diversity in appearance of the organisms a series of plates were inoculated from each of the two cultures. Within 24 hours on 1 per cent. glucose agar there was a copious growth of colonies on each series of plates. At this stage they were all indistinguishable. They consisted of very minute pin-point colonies, discrete for the most part, with apparently a regular margin, and were rounded or slightly oval in shape. With a low objective they appeared to be homogeneous and granular. They were so small that unless the agar was very clear they could quite easily be missed. Incubated further these colonies grow larger and may attain in a few cases a diameter of about 0·5 to 0·75 mm., though the majority remain smaller.

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[1] Hort, Shaw, and others: Brit. Med. Jour., March 27th and April 17th and 24th, 1915.

On examination of the larger colonies after several days' incubation, the impression is gained that there are two kinds.

In cultures from Case 2 the colonies were rounded or oval, with a slightly more opaque dot in the centre. The majority had a fairly regular margin, and by the aid of a hand lens the colony looked as if it had a slightly more opaque centre surrounded by a lighter zone, which in turn was surrounded by another rim of the same opacity as the centre. While the majority showed this form there were others which had a distinctly crenated margin. On examination with a low objective they presented the same granular appearance as the former colonies, but differed in that the edge was distinctly "scalloped." The larger colonies were very flat and occasionally a very slightly prominent central boss could be seen. When several days old both types of colony have a dry, glazed appearance.

Colonies from Case 1 showed under a low objective exactly the same granular appearance. When older it was found that the majority did not preserve a smooth unbroken edge. The margin began to show crenation, and in old cultures the edge was very markedly serrated; so much so that there appeared radial divisions running well into the interior and giving the edge a feathery appearance. At the same time there were interspersed with these colonies a few which preserved the smooth edge and were then exactly like the majority of the colonies of Case 2. Except for the feathery edge, colonies from the two cases could not be distinguished with a low-power objective. No growth occurred at room temperature.

Cultures from Case 2 in + 10 nutrient broth after many days' incubation showed a deposit of whitish particles at the bottom and sides of the tube and a slight uneven scum floated on the top. Broth cultures have not yet been made from Case 1. In the water of condensation in agar tubes from Case 1 and Case 2 respectively could be seen minute particles suspended in the liquid. Saline emulsions made from the two cultures differed slightly. That made with a culture from Case 1, while becoming very slightly opalescent, was characterised mainly by the suspension in it of many minute particles or granules. Similar particles were seen in emulsions from a culture in Case 2, but they were not so numerous and the fluid was more opalescent. The same difference was observed in spreading films. The culture from Case 2 seemed to emulsify easily with only a few granules in it, while in that from Case 1 there were more granules and a homogeneous mixture was not obtained. Both cultures suggested the appearance observed in making films from diphtheria cultures, especially that of Case 1. Glucose and saccharose serum peptone water tubes were inoculated from the original cultures from both cases, with the result that glucose in each case was rendered acid while the saccharose remained unaffected. Milk was apparently not clotted by the organism of either case. Cultures were made anaerobically, but no growth was apparent after two days' incubation. Similarly, no apparent growth was obtained after sowing on ordinary + 10 agar and incubating at room temperature. Stab culture in glucose agar showed small granules and discs along the needle track. The organism is fairly long-lived.

Morphology and staining reactions.—Films were made from isolated colonies obtained by plating out and from agar cultures raised from a single plate colony of each of the two types mentioned as occurring in cultures from each case. Gram's and a slightly modified Neisser's stain were employed. A film from a smooth-margin colony from Case 1 showed short and sometimes rather thick Gram-positive rods often occurring as diplobacilli, arranged frequently parallel to one another in small rows. They varied in size and in the intensity with which they retained the Gram stain. They recalled at once the appearance of Hoffmann's bacillus. Others again were club-shaped, or in shape like a point of exclamation. Others appeared to be Gram-positive diplococci of various sizes, sometimes resembling the meningococcus in shape; in other cases the two elements composing the diplo were unequal in size, and sometimes one was Gram-positive while the other was Gram-negative, and occasionally the staining was indefinite. Sometimes these cocci lay singly and then were often oval in shape or slightly pointed at one end. Other diplococci were exceedingly minute, no more than mere specks, and these frequently stained a faint red with Gram and often appeared to have a halo around them. Some appeared to be beaded bacilli, the intermediate parts taking a lighter tint of the Gram. In addition many of the minute Gram-positive dots already referred to were seen, sometimes with a faint red stain joining them; in other cases this connexion was not evident.

In films made from a 12-hour agar growth in addition to the above a short thin Gram-negative rod was seen which sometimes showed strips of a slightly darker red occurring in it. Others had a minute Gram-positive dot at each end. Occasionally also a faint Gram-negative diplococcus was seen. Films from an agar growth raised from one of the smooth-margin type from the culture in Case 2 showed practically the same appearance. Neisser's stain applied to films of the above strains grown on Lorrain Smith's medium showed many bacilli more or less closely recalling Hoffmann's bacillus and staining a uniform red. Others looked exactly like meningococci, while others were short rods with a black bead at each pole. Some were slightly club-shaped and showed black bars transversely to the long axis. While these beaded or barred forms were seen the majority stained red, and in the case of films from the culture in Case 2 while barred forms were seen the majority were coccal, ovoid, or diplobacillary in shape.

Films made from agar cultures raised from one colony of the feathery-edge type from the culture in Case 1 showed forms indistinguishable from the Klebs-Löffler bacillus, with the difference that the film although made from a young culture looked as if it were made from an old diphtheria culture with abundant involution forms. Any illustrated text-book showing involution forms of the diphtheria bacillus will give an idea of what was found here. It is to be noted, however, that along with these forms was found also an occasional thin Gram-negative rod; often a Gram-negative rod lay beside a Gram-positive one. Also a few very small Gram-negative diplococci were seen.

Practically the same appearance was got in films made from a culture raised from a single crenated colony from Case 2. When stained by Neisser it would at once be said that they were films of the Klebs-Löffler bacillus. The smooth-edged type of colony, therefore, would appear to contain a larger proportion of the Hoffmann element, while those with crenated margins had more of the Klebs-Löffler element. In both, however, occasional Gram-negative rods and Gram-negative and positive diplococci and ovoids were seen. When film preparations were made from glucose serum peptone water it was surprising to find the large and irregular forms on the whole absent. The majority were very short diplobacilli, and films made from the two cases could scarcely be differentiated.

Animal inoculations.—White mice were inoculated on May 27th with 1 c.c. of an emulsion in sterile saline of a 12-hour agar culture made from each of the two cases described. For each case two mice were used, one for intraperitoneal and one for subcutaneous inoculation.

Within 20 hours one of the mice inoculated with a culture from Case 2 was dead. The other mouse from the same case appeared to be all right. On the 30th it appeared to be very ill; it maintained the same position all the time, back arched convexly outwards, head touching floor and trembling slightly. On causing the animal to move the trembling became more marked and it walked slowly, dragging one leg after the other. The mere act of touching the animal appeared to increase the tremors. On the 31st it was found dead. One of the two mice inoculated with a culture from Case 1 was found dying within 20 hours. It was lying on one side with its back arched, head down, and toes clenched. Nothing definite was found post mortem. The other mouse inoculated from the same case is still alive and well.

The three mice died from a general septicæmia as the organism was recovered from the heart blood. Films made from the peritoneal fluid, in addition to the variety of form of the organism inoculated, showed large numbers of small Gram-negative diplococci bearing a resemblance to meningococci, also very minute negative diplococci and Gram-negative rods occurring both singly and as diplos. Practically the same findings as in films made from cultures, with the exception that there were many more Gram-negative diplococci.

Two rabbits were inoculated on the same date intravenously with 4 c.c. of the same cultures used for the mice. These rabbits are still well, but seem slightly thinner than they were. Two small guinea-pigs were inoculated on June 2nd subcutaneously into the skin of the abdomen, each with an emulsion in 3 c.c. sterile saline of one agar slope from each case respectively. The age of the agar culture was 20 hours. Both animals are still alive, but that inoculated from Case 1 has some œdema of the lower part of the abdomen, while round the site of inoculation the skin is hard, irregular, and tender on pressure. The hair has disappeared from the part and it looks leathery.[2]

I have said that in every case of cerebro-spinal infection I have found a Gram-negative diplococcus. In every one also I have found two or more of the types of organism just described. In view of that I have stained many of my spare films made from different cases examined during the last three months and have found definite diphtheroid rods present with beading and sometimes with bars. In Gram films made from the various blood cultures in which I was unsuccessful in finding a growth I have been able to distinguish in addition to Gram-negative diplococci one or more of the forms above described. They were evidently present in the attempted cultures and may have grown to a certain extent, but for some reason or other subculture did not succeed. I have found the same types of organism in films made from pus from cases showing definite meningitis. In three cases I have examined catheter specimens of urine, and in two by culture have got the same type of organism. The third one was only examined by film preparations made from the centrifuged deposit and showed again Gram-negative diplococci as well as one or more of the other types. I have observed apparently the same organisms in films made from a case of irregular pneumonia. In this case there appeared to be much larger club-shaped bodies, many with a longer tapering extremity. The same curious variety of form has been got in films and culture from the heart blood after passage through mice.

The factor common to all the fluids and purulent exudates which I have examined is the invariable presence of diphtheroid rods together with Gram-positive and Gram-negative diplococci. All these various types of form have been reproduced in cultures from Cases 1 and 2, and while in culture the Gram-positive elements preponderated, yet on passage through mice large numbers of Gram-negative diplococci were obtained in the peritoneal exudate. These two cases, therefore, I regard as due to the same infective agent as is responsible for the present epidemic, notwithstanding that Case 1 is different from anything I have seen described as due to the meningococcus, and in spite of the fact that Case 2 was complicated by middle-ear disease.

The second point which I now wish to make is this, that in the disease termed "spotted" fever, or cerebro-spinal fever, the causal organism is a pleomorphous diphtheroid rod closely akin to the Klebs-Löffler bacillus, if not a variant of that organism. It is rather fitting that in "spotted" fever, or cerebro-spinal fever, which is characterised generally by the absence of spots, and the absence of typical meningitis in the majority of cases, the paradox should hold good with regard to the etiological factor, so that meningococcal infections are not really due to the meningococcus at all, but rather to an extremely pleomorphous organism. There are various reasons for making this statement, one of which has already been given. Others may briefly be referred to. It has always been a puzzle why such an extremely delicate organism as the meningococcus should be capable of transmission even through a hypothetical series of intermediaries from one case to another frequently at very considerable distance apart. The suggestion now is that we are dealing really with a pleomorphous organism and that the infection is transmitted, not by the meningococcus as such, but by another form in the life-history of the organism which is pretty robust and capable of surviving for considerable periods of time and even under adverse conditions. This form I believe to be a diphtheroid one, although it is always possible that, as Hort and others suggest, there is an ultra-microscopic form. I would put it another way and say that it is probably transmitted in the same way as diphtheria. Subject necessarily to verification by subsequent rigorous investigation I believe the organism to be highly pleomorphous. It would be an extraordinary coincidence if in all these cases whose fluids or exudates I have examined a combination of more or less the same types of organism should be present. Further, the very careful and painstaking efforts of Hort and others to separate out the various forms have met with no success. The explanation is probably to be found in the fact, not that the cultures are impure, but that the organism undergoes various metamorphoses according to circumstances whose nature we do not yet understand. This seems a reasonable explanation in view of the fact that in film preparations great differences in form and staining reaction are frequently evident in the two elements composing a single diplococcus or diplobacillus. Further, we know how extremely pleomorphous is the familiar Klebs-Löffler bacillus, especially in older cultures, and also how in apparently pure cultures of the meningococcus variations in staining, in size, and even in shape have been described. The feature common to both the diphtheria bacillus and the meningococcus, hitherto accepted as being pure strains, is their tendency to variation, more especially of course in the case of the former organism. This plemorphism suggests that after all Hoffmann's bacillus may be merely one of the many forms of the true Klebs-Löffler bacillus. Further, the hypothesis which I suggest would explain to a certain extent the reason for the discrepancies and frequent failures met with in serum treatment.

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[2] This animal has since died.

If the so-called meningococcus is merely a phase in the life-history of a diphtheroid organism we can understand the effect on the patient of a serum such as Flexner's. Temporary benefit may be expected to follow as a result of its action on the meningococcal forms. The other and presumably the more resistant diphtheroid forms are left uninfluenced. The effect of this wears off, and the patient may be again benefited by the introduction of serum, and so the process goes on until his own tissues overcome the other forms of the infecting organism or until death occurs. My suggestion is that an anti-diphtheroid serum or vaccine, or even an antitoxin analogous to diphtherial antitoxin, may be found to exert a greater influence on the course of the disease than the present antimeningococcal serum, which probably only acts on the so-called meningococcal forms. Further, I would make the suggestion that, if this assumption is correct, the life-history of the gonococcus must be reinvestigated, for, owing to the similarity between the gonococcus and the meningococcus, one might reasonably expect to find a diphtheroid form of the urethral coccus as well. As a matter of fact, various diphtheroid rods are known to be found in that region. It would further explain the very disappointing results obtained by the vaccine treatment of gonorrhœa. The gonococcus may disappear for a time, but returns again, because the vaccine has no effect on the presumably more resistant diphtheroid forms.

If the views above enumerated are correct it would further go to prove the comparative uselessness of examining contacts merely for meningococci. The want of uniformity in the results obtained suggests either errors of technique or the fact that the meningococcus is not always present in the throat as such, but may exist in another form.

Further evidence could be adduced if space permitted in support of the analogy between the manifestations of the disease in the present epidemic and those met with in diphtheria, especially the more malignant forms of it. Within broad limits, seasonal prevalence, presumably incubation period, mode of onset, occasional appearance of rashes, hæmorrhages, and occasionally subsequent paralyses are common to both. The analogy between the two diseases has been remarked upon by several observers both in this and other epidemics. Many of the victims subsequently develop heart affections, and I have now post-mortem notes before me of a case in which the patient died suddenly from heart failure when he was apparently convalescent. Another feature found frequently in cases of diphtheria, as in the epidemic with which we have been dealing, is the comparative slowness of the pulse in relation to the temperature curve. Clinically, in the epidemic mentioned we have seen cases presenting the most diverse symptoms, and many patients must have recovered or died with a wrong diagnosis. I believe the statement quoted by Sir William Osler[3] to be probably very near the truth —viz., that in 2 per cent. of apparently healthy people the diplococcus may be found. I would suggest substituting the words "infective agent" for "diplococcus." Finally, might I make a suggestion that the local epidemics described by McGowan[4] as occurring in industrial schools in Edinburgh and elsewhere may actually have been due to a diphtheroid infection of the type suggested by me and not to a combination of atypical pneumococcal infection occurring in boys the subject of endemic status lymphaticus.

To sum up, I would suggest that the causal organism of the epidemic dealt with in this article is a diphtheroid rod closely related to the Klebs-Löffler bacillus, of which, indeed, it may actually be a variant, and that we are witnessing, as Sir William Osler says, the struggle of a new disease to win a place among the great epidemics of the world. This diphtheroid rod is an extremely pleomorphous organism and may give rise to Hoffmann-like forms, to what appear to be meningococci, &c. It is probably very widely spread in nature in one of its more resistant forms, and it is this form and not the meningococcal one which is transmitted from one to another. It is also probably to be found more frequently among individuals than we imagine. The disease may give rise to the most diverse symptoms, evidently due to an actual invasion of the body by the infective agent, and not merely to the action of toxins manufactured locally. It is in this respect that it differs from diphtheria as we understand it. In other ways, however, there is a certain similarity between the two diseases.

The above hypothesis offers an explanation why sera fail so often in the treatment of so-called cerebro-spinal meningitis, and the analogy to diphtheria suggests that treatment on similar lines should be adopted. It further suggests that fresh investigation must be made into the life-history of the gonococcus, and offers an explanation of the failure of vaccines in that disease.

I am aware that much of the above is open to criticism, but I have already stated that fuller investigation remains to be done when times are more normal than they are at present.

PS.—Since writing the above I find that I have succeeded in obtaining a growth directly from the cerebro-spinal fluid of a fatal case which was otherwise quite healthy and where there was no middle-ear disease. I have also obtained a growth from the blood of another case sent me by a pathologist, and I have seen organisms, morphologically similar to those described, in films made from the pleural fluid. These facts are further evidence in favour of the sameness of the organism causing the present epidemic.

Reading.

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[3] Brit. Med. Jour., Jan. 30th, 1915.

[4] Endemic Febrile Illness with Rapidly Fatal Cases Occurring in a Boys' Industrial School, Proceedings of the Pathological Society of Great Britain and Ireland, January, 1913, p. 412.

HEALTH OF NEWQUAY (CORNWALL).—Dr. A. Hardwick, the medical officer of health of Newquay, in his twenty-sixth annual report, states that during 1914 the death-rate was 10·2 per 1000; the birth-rate was 11·0 per 1000. Newquay has increased rapidly, probably more so than any other town in Cornwall. In 1871 the population was 1121, and now it is estimated at 4850.

SEVERE CASE OF
INTRACTABLE SYPHILIS TREATED SATISFACTORILY WITH HECTINE.

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AND

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TEMPORARY LIEUTENANT R.A.M.C.; MEDICAL OFFICER IN CHARGE OF SYPHILIS WARDS, MILITARY HOSPITAL, ROCHESTER-ROW, S.W.

Private ——, aged 30, was admitted to the Military Hospital, Rochester-row, London, S.W., on Sept. 19th, 1914, suffering from a large perforation of the hard palate. He was placed on the syphilis register after giving the following history.

History of case.—The patient, a reservist, had been a very heavy beer drinker. In November, 1910, he developed a hard chancre on the penis. He did not seek medical advice, however, until after the chancre had been present for three weeks. He then consulted a civilian doctor, who commenced a course of mercurial treatment comprising pills and medicine by the mouth. This he continued for six months. Three weeks later, having abandoned his treatment, a rash appeared on the trunk, arms, and legs, which he described as dry and scaly. The patient then went to a large general hospital when scabies was diagnosed, and he was given sulphur ointment supplemented by sulphur vapour baths, and the rash gradually disappeared. In 1913 (two years ago) a "lump" appeared in the centre of the hard palate. He attended the Mildmay Mission Hospital, when he was again given mercurial pills and mouth wash. He continued his work for four months, and the condition seemed to improve. The gumma, however, for such it was, did not discharge nor was the surface broken. Eight months later (approximately one year ago) the gumma again commenced to increase in size. This he reported to the Mildmay Mission Hospital. It had now broken down and was discharging profusely. Mercurial treatment was resumed, but the ulcer progressively got worse for a period of six months. An operation was now suggested for the removal of the necrosed bone. At this date, however, he was called up to the colours as a reservist, and after completing one month's service (including three weeks in France) he was sent to the Rochester-row Military Hospital for treatment.

Condition on admission.—The patient was in a flabby, unhealthy condition, presenting an oval perforation of the hard palate roughly the size of a shilling, through which was exuding a foul yellow discharge, and his breath was very foul. There were no external gummatous changes elsewhere about the body. The nervous system was unaffected, as evidenced by normal reflexes. Weight, 12st. 4½lb. There were no albumin and no signs of hepatic cirrhosis. The heart and chest were normal.

Treatment.—A combined course of salvarsan intravenously, accompanied by mercurial injections intramuscularly, was decided upon. Accordingly the patient was given three intravenous injections of 0·9 grm. neosalvarsan, administered at intervals of a fortnight, accompanied by ten weekly injections of 1 gr. mercurial cream, during which course his weight dropped to 11st. 3lb. He was now put on pot. iodid. gr. 7 three times a day and daily inunctions of ung. hydrarg. drm. 1. The pot. iodid. was gradually increased until 15 gr. four times a day were tolerated without any ill effects. The discharge through the perforation, however, was so foul that the patient had to be isolated. The perforation gradually increased in size—this three months after admission to hospital. The following necrosed pieces of bone were removed during this period at intervals: the whole of the vomer, the perpendicular plate of the ethmoid, and the palatal process of both the palate and the superior maxilla of the right side. The Wassermann reaction was positive. It was now deemed advisable to adminster an injection of 0·6 grm. of the original salvarsan, which was tolerated without any reaction, pot. iodid., now 20 gr. four times daily, accompanied by daily mercurial inunctions, being continued. For about ten days the destructive processes appeared to be no longer progressive. The patient now developed alarming attacks of vomiting, and so a diet consisting of small quantities of milk at short intervals was resorted to. The lower lid of the right eye became very œdematous, accompanied by almost alarming protrusion of the palpebral conjunctiva. It was considered possible that the patient was being overtreated and a rest of two weeks was ordered, during which time, however, the œdema, if anything, became more marked. No exophthalmos. Vision in that eye was rendered impossible, unless the lids were separated. The sight then, however, was found to be normal. The lacrymal duct was occluded, and bony crackling could be demonstrated when pressure was made over the right lacrymal bone, in which region a discharging sinus appeared. The first molar tooth on the right side was extracted from the upper jaw, and the antrum, which now possessed no inner wall, thoroughly irrigated. Necrosed bone was at the same time removed, comprising the outer wall of the alveolar process and part of the malar bone, thus opening up the antrum external to the alveolar process. A leech was applied to the œdematous lower lid followed by fomentations for six hours, which reduced the swelling very satisfactorily.

At this stage it was decided to try a course of hectine injections, with which the French syphilogists have claimed such good results. Accordingly ten subcutaneous injections of 0·2 grm. were given, the first three on alternative days followed by seven daily injections. The patient's condition commenced to improve almost at once and the vomiting ceased. The discharge became less, and the appetite improved. Nobody was more impressed than the patient himself, who at this period had become very despondent. In the first week his weight increased 7 lb., and at the end of the course of ten injections he was allowed to sit up.

Encouraged by the very satisfactory results of this first course of ten injections, a second course was commenced on March 11th, 1915, comprising ten daily subcutaneous injections of 0·2 grm. hectine in the buttock. During this course the patient increased in weight by 7½ lb. After a fortnight's rest a third course, also comprising ten daily subcutaneous injections, was administered, during which he increased exactly 5 lb. The gross gain in weight from prior to the hectine courses is indicated by the increase from a minimum of 10 st. ¾ lb. up to 12 st. 8 lb.—i.e., 2 st. 7¼ lb.

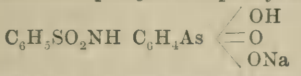
Present condition.—As can be surmised from the increase in weight, the general condition of the patient now is extremely satisfactory. His appetite is normal, and he takes his daily exercise round the hospital quadrangle; he is anxious to resume general duties. The huge cavity resulting from the total destruction of the structures comprising the nasal fossæ is lined with healthy granulations. There is a bridge of healthy gum separating the orifice external to the alveolar process and the perforation of the hard palate. There is now no discharge coming down into the mouth, and the sinus over the right lacrymal bone is healthy. It is considered wise to keep the patient on a modified course of pot. iodid. and mercurial inunction.

The case is interesting in that it clearly proves that we have, apart from the already accepted specifics comprising mercury, pot. iodid., salvarsan, neosalvarsan, and now kharsivan, neokharsivan, and the French arsenobenzol, "yet another valuable string to our bow." In this case we have not the least doubt that but for the employment of hectine this patient's chance of ever becoming an efficient soldier, or, in fact, of ever recovering—his decline in weight and general condition being so rapid—was very poor. It was a matter of daily anxiety as to how much further the processes would go without involving the meninges. This is undoubtedly unique in our experience in the most severe cases of syphilis treated at this hospital, in that no improvement resulted when subjected to the above described intensified combination of accepted specifics. Regarding the patient's future service in the army, he is merely waiting now for the general structures of the buccal cavity to have settled down sufficiently to warrant the fitting of a dental obturator.

Encouraged by the above, we have used hectine in other cases, and hope to publish more notes on the subject before long, and discuss its relative value with the results we are obtaining with kharsivan and neokharsivan, which drugs we are now giving an exhaustive trial in approximately 100 cases.

The following formula gives the composition of hectine:—

Sodii Benzo-Sulpho-*p*-Aminophenyl arsonas.



$$C_6H_5SO_2NH\ C_6H_4As\begin{cases} OH \\ =O \\ ONa \end{cases}$$

Hectine consists of colourless needles, very soluble in water, containing approximately 21 per cent. of arsenic. The preparation used is put up in sterile ampules containing 20 cg. in 1 c.c.

Hitherto we have employed hectine purely locally—e.g., into the neighbourhood of a chancre, gumma, &c.—with good results clinically.

CENTENARIANS.—Mrs. Mary Shelton, of Rowcroft, Stroud, Gloucestershire, celebrated the 103rd anniversary of her birthday on May 29th.—Mrs. Jane Taylor, who was over 100 years of age, has recently died at Burlescombe, Devon.

DEATH OF MR. FRIEND EDWARD STREETEN.—Mr. Streeten, L.R.C.P. Edin., M.R.C.S., D.P.H., died recently at Swindon, in his sixty-third year. He received his medical education at St. George's Hospital, and in the "eighties" began practice at Swindon. After some years he gave up his private work and devoted his whole time to his various appointments. He was medical officer of health for the borough of Swindon and for the Highworth rural district, and was also medical superintendent of the Swindon and District Isolation Hospital, and school medical officer for the Swindon education committee. He was one of the best-known men in Swindon, taking an interest in all local matters, and was held in great esteem there. He was an energetic Freemason, and at the time of his death was Acting Provincial Grand Secretary. He leave a widow and two daughters.

VACCINES IN THE TREATMENT OF RESPIRATORY DISEASES.[1]

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WITHIN the past few years vaccines have been gradually coming into more frequent use in the treatment of diseases of the respiratory tract. Our knowledge as to their applicability and its limits is still to a great extent tentative, and it is only by the accumulation and comparison of the experience of different observers that we can hope to advance our knowledge. I do not, in the present paper, intend to concern myself with diseases due to tuberculous infection.

In the early days of vaccine treatment it was thought that its scope was limited to localised diseases, and in particular to those of chronic course. We know now that neither the degree of acuteness nor the lack of localisation is a bar to successful treatment, and some of the most marked successes have been in the case of acute generalised diseases. The main difficulty of vaccine treatment is one of diagnosis—of bacteriological diagnosis, and this difficulty is specially great in the case of diseases of the respiratory tract. No clinical entity among the diseases of the respiratory organs—not even pneumonia—can be stated with confidence to be due to a constant bacterial cause. Pneumonia, though most commonly due to the pneumococcus, may be due to any one of half a dozen organisms. A similar statement would be true of the infective diseases of the rest of the respiratory tract. We cannot, therefore, foretell from clinical grounds what organism we have to deal with in any particular case.

But this is only the beginning of our difficulties. The respiratory tract is part of the surface of the body, and it is open to constant bacterial soiling. In the upper part of the tract the mucous membrane is the normal habitat of a great number and variety of organisms, many of which are potentially pathogenic. In case of chronic infection the number of organisms may be indefinitely increased, and two or more of them may be simultaneously pathogenic. Our problem is, therefore, not merely to discover the organisms present, but to select from among them that which is most likely to be causative, bearing in mind that more than one may be causative at the same time. With our present degree of knowledge of the bacteriology of the respiratory tract it is not easy to solve the problem. Indeed, in not a few cases the diagnosis is only settled by the result of treatment. This, however, is not peculiar to vaccine treatment.

This difficulty of diagnosis might not, it is true, be a great hindrance if we were merely engaged in studying a scientific problem, where we had ample time and material at our disposal. It is very real, however, in the conditions of practice, whether in hospital or in private. It is not easy to subject a patient to several series of inoculations with different organisms, (*b*) being employed when (*a*) has proved useless, and (*c*) in its turn replacing (*b*). It is by an increasing knowledge of the relations of the several organisms which inhabit the respiratory tract to definite diseased conditions that vaccine treatment will be rendered at once more widely applicable and more efficacious in these diseases. When we are able to make as certain a bacteriological diagnosis of the cause of an infective lesion of the nose, throat, or bronchi as we are of the cause of a boil, vaccine treatment of respiratory diseases will be simple. In the meantime we have high authority for believing that "probability is the very guide of life," and the same authority advises us, in matters of practice, to consider ourselves under an absolute and formal obligation, in point of prudence and of interest, to act upon a presumption or low probability, though it be so low as to leave the mind in very great doubt which is the truth.[2]

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[1] A paper read before the Section of Medicine, Royal Academy of Medicine in Ireland, on May 21st, 1915.

Where no such presumption or probability can be found the question arises whether it is better to treat with one organism only or with a combined vaccine. The former is the more scientific method, and is the line I usually prefer. If, however, treatment produces no effect in a reasonable time, then the presumption in favour of the selected organism diminishes and may disappear, and another must take its place. In the conditions of practice, however, one cannot always choose the most scientific method, and in many cases one must from the start use a mixed vaccine, or, as I prefer, combined treatment by two or more vaccines. But the difficulties of administration are thereby greatly increased.

In vaccine treatment two points are essential: (1) proper dosage; and (2) suitable periods. It is not always easy to form a just judgment on these points, even with a simple vaccine, and when two or more vaccines are employed simultaneously the difficulties are greatly increased. It is impossible to analyse the effect and to assign to each vaccine its proper share. Where the infection is truly mixed the negative phase of one organism may interfere with the positive phase of another, and the results are inextricably entangled. When, however, it is necessary to treat with more than one organism it is better to keep the vaccines separate than to use a mixed vaccine. By doing so one can keep a certain control of the respective doses, and one can at any rate give the vaccines at approximately suitable intervals.

Something can be done to simplify the problem of diagnosis by care in the collection and examination of material. As the seat of disease may be either the nose, the naso-pharynx, the larynx, trachea, and bronchi, or the lungs, our methods of collection will naturally vary. If the material is to be collected from the nose the orifices of the nostrils should be well washed with soap and hot water, and swabbed with a pledget of wool moistened with alcohol. The patient, closing one nostril, should then blow his nose forcibly into a wide-mouthed sterile bottle; the process should then be repeated with the other nostril. If the bacteriological examination can be made without delay a sterile wipe or handkerchief may be substituted for the bottle, but the danger of contamination from the skin is greater.

In the case of the naso-pharynx, throat, or bronchi attention must first be paid to the cleansing of the mouth. It should be well rinsed with hot sterile water and the teeth thoroughly brushed. The patient is then directed to hawk or cough, as the case may be, and to spit into a sterile flask. In the case of the naso-pharynx, if secretion be plentiful, a culture may readily be obtained direct from the throat by the help of a platinum loop or a sterile swab. When the patient is entrusted with the collection of the specimen himself he should be directed to collect it first thing in the morning. In every case enough material must be obtained to permit of direct examination of smears as well as of cultural investigation.

Sputum, from whatever source and whatever may be the methods employed in collecting it, should, before cultures are made, be cleansed by washing in clean water. A convenient method, devised, I think, by Dr. W. E. M. Armstrong, is to put the sputum in a gauze strainer, such as is used on the tea-table, and hang it for some time under a slow-flowing tap. This superficial washing will almost certainly wash off any organisms which merely adhere to the sputum, while it will leave behind those which have accompanied it from its source.

The next step is the examination of direct smears, and from the study of these smears more than from the cultures one forms opinions as to the relative importance of the organisms present. A preponderating number of one organism is important, but weight must also be given to the known causative power of each. The presence of an organism not known to be normally present in the region under investigation must receive special attention.

Cultures are next made. I rely almost entirely on agar and blood-agar plates and on broth tubes. The blood-agar is of particular use in the isolation of the streptococcus and the pneumococcus.

I next proceed to discuss the results obtained in treatment of various conditions. I only purpose dealing with cases in which the treatment was given to such a degree as to permit of some judgment being formed as to its effects. I exclude, therefore, a number of cases in which its use was desultory or haphazard, as also a number in whose treatment I have only had a consultative or advisory duty. Some, however, are included in which, though a trial was given, it was hardly sufficient to come to a final judgment. The series finds itself reduced by these weedings to 14 cases. They were as follows: Chronic naso-pharyngeal catarrh, 4; recurrent acute naso-pharyngeal catarrh, 4; recurrent acute general catarrh with bronchitis, 3; chronic bronchitis, 2; and pulmonary abscess, 1. The 4 cases of chronic naso-pharyngeal catarrh were of long standing, and all the patients had undergone local surgical treatment of various kinds. The infections were: in 1 case pneumococcus, in 1 pneumococcus and micrococcus catarrhalis, in 1 streptococcus, and in 1 staphylococcus aureus and streptococcus. The dosage employed was pneumococcus, 10–60,000,000; micrococcus catarrhalis, 50–200,000,000; streptococcus, 10–25,000,000; and staphylococcus aureus, 50–500,000,000. The number of injections varied from 6 to 18. The results in three of the cases were entirely satisfactory; in the fourth the treatment had no effect. In Case 1, that treated by the pneumococcus alone, the condition had been very severe and protracted. The patient was unable to breathe through his nose, and at night the catarrh was so severe that he could not sleep more than a few minutes at a time. He used a dozen handkerchiefs in the day. Progress was steady, and after ten injections all his symptoms had disappeared. In Case 2, treated by streptococcus, relief was obtained at once, and only six injections were required. It is possible that this patient will need a further course. In Case 4, in which staphylococcus aureus was found, the treatment failed. This was a surprise to me, as the presence of a definite pathogenic organism such as staphylococcus aureus in the pharynx and nose offered good hope of cure; a further course with the streptococcus, which was also present, gave no result.

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[2] Bishop Butler: The Analogy of Religion, Introduction.

Four cases of acute recurrent nasal catarrh were treated. In 2 the infection was of micrococcus catarrhalis, in 1 of streptococcus, and in 1 of staphylococcus aureus. In Case 5 the nasal catarrh recurred nearly every evening, and was, I believe, dependent on pyorrhœa, for which condition the patient was sent to me for treatment. The vaccine was made from the pus of the gums, and it was only after a few injections had been given that I learned of the catarrh by the patient asking me whether the injections could have cured the condition, from which he unexpectedly found himself free. He had one or two relapses, but on the cure of the pyorrhœa the catarrh disappeared. In treating nasopharyngeal conditions it is always necessary to search for pyorrhœa and to insist on adequate local treatment. Case 6 was that of a barrister very active in political work, who had frequently to speak in the open air, with the constant result that a violent attack of catarrh came on, and he spent a sleepless night. The condition had persisted for nine months. In all he got 11 injections, varying from 50–150,000,000 micrococcus catarrhalis. He became perfectly well, and has remained so for three years. Case 7 (streptococcus) was that of a colleague who suffered much from sudden severe attacks of catarrh lasting a day or two, and recurring every few weeks. He did not permit me to carry out the treatment systematically, because after two injections of 10,000,000 he remained free from trouble for three months. One or two slight recurrences were easily relieved by further injections. Case 8, of staphylococcus aureus, was one of so-called "hay fever" occurring in a naval officer. He suffered from it every dusty day in summer whether in town or country. He never had it in winter or at any time afloat. He received four injections in July, 1913, and remained entirely free from catarrh, though ashore, for the rest of the summer. In 1914 he had a relapse, but I do not know the result of the treatment which was then resumed.

Of the 3 cases of acute recurrent general catarrh, 2 were infections of micrococcus catarrhalis and 1 of a staphylococcus. In Case 9, of micrococcus catarrhalis infection, the patient received eight injections, varying from 7–20,000,000, with the view of giving an immunity against future attacks. The course was given during the winter months, and the patient had no attack after the first injection. She had, however, a recurrence the following winter, and no permanent good resulted. I think that the doses given were too small. In Cases 10 and 11 the patients were "always catching cold," as they put it. Short courses of four injections of a staphylococcus and two of micrococcus catarrhalis respectively have given them satisfactory protection for the past nine months.

I have only treated two cases of chronic bronchitis, one with micrococcus catarrhalis and one with streptococcus. I do not think that either case was benefited to any appreciable extent, but in neither case was a sufficient trial given. One of these patients has just asked me to treat him again by the same method.

The last case in the series was one of abscess of the lung. A young woman, aged 26 years, after the operation of removal of the tonsils and of adenoids in the end of June last, developed signs of inflammation in the lower lobe of the right lung. She was put under the care of Dr. T. G. Moorhead, and subsequently, during his absence from Dublin, of my colleague Dr. F. X. Callaghan. The inflammation pursued a varying course for some four weeks; consolidation occurred, followed by abscess formation. The diagnosis was confirmed by the help of the X rays. The expectorated pus was examined, streptococcus and a staphylococcus being found. Vaccines were prepared, and doses of 5–10,000,000 of the one, and 25–50,000,000 of the other given at two-day and four-day intervals. A few doses of antistreptococcus serum were also given. The only other active treatment was the use, on Dr. Moorhead's advice, of an inhalant containing formalin, chloroform, menthol, and pine oil. This undoubtedly helped to empty the cavity and thereby to diminish toxæmia. For three weeks (up to August 28th) there was no improvement and the cavity extended, becoming easily mapped out by percussion on the anterior chest wall. The propriety of operation was discussed from day to day, when improvement began and (on Sept. 4th) the temperature settled to normal. For a long time the cavity was very obvious by percussion and auscultation, "cracked-pot sound" being very marked, and cough persisted throughout the winter, but otherwise the patient's health was good. I had the opportunity of examining her again a few weeks ago. The cavity is much shrunken; it cannot be detected by percussion, though cavernous breathing is heard; there is apparently a fair amount of fibrosis round the cavity; there is still some cough, but the expectoration is not foul. The patient's general health is excellent. I cannot attempt to assign to each part of the treatment its proper share of credit, but the prospect at one time seemed hopeless or nearly so, and the result has been very satisfactory.

I have not included in my series any cases of any form of pneumonia other than that just related, since in no other have I applied the treatment systematically. It appears to be of little use to employ vaccines in the treatment of pneumonia unless the case comes under observation very early, an event which rarely happens.

Taking my series as related, in 10 of the 14 cases treated the result was very satisfactory; in 1 there was a temporary improvement, and in 3 no result could be traced. In 2 of these latter I am not satisfied that the trial was adequate. Classifying the cases treated according to infection the results are as follows: micrococcus catarrhalis 5, of which 3 became quite well, 1 was benefited and 1 unaffected; pneumococcus 2, both became well; staphylococcus 1, became well; streptococcus 3, of whom 2 became well, and 1 was unaffected; streptococcus and staphylococcus 2, both became well; staphylococcus aureus 1, became well.

When one remembers that many of these conditions had already proved their obstinacy, and that ordinary methods of treatment of chronic respiratory diseases are of very little avail, I think it may be claimed that the results of vaccine treatment are distinctly encouraging.

Dublin.

X RAY LOCALISATION AND THE REMOVAL OF FOREIGN BODIES ON THE X RAY TABLE.

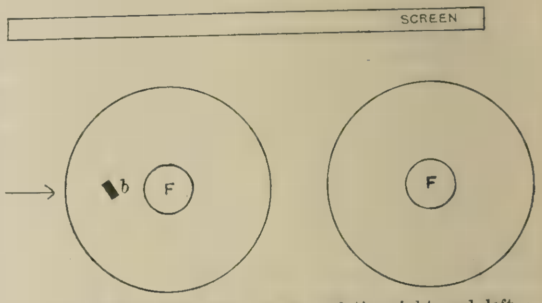
BY JOHN R. CALDWELL, M.B., CH.B. ST. AND.,
LIEUTENANT, ROYAL ARMY MEDICAL CORPS (SPECIAL RESERVE).

IN these days one rarely glances through a journal of surgery without finding a description of some "new" method of localising foreign bodies. These are nearly all modifications of the classical method of Mackenzie Davidson, and the principle underlying them all is the same. The majority have as their object the determination in inches or centimetres of the depth of a foreign body in the tissues. The radiographer thinks he has done his duty when he has stated that below a certain mark on the skin at a certain depth will be found the foreign body in question. There is at present a tendency to overestimate the value of such information. The almost unattainable ideal is an anatomical localisation. Stereoscopy aims at such, but unfortunately the same picture is differently interpreted by different observers, and there are numerous inexplicable fallacies in the method. I repeat that the value of X ray localisation in units has been overestimated, and that to be really useful the information provided by the radiographer should be in units; yes, but should also give an idea of the relations to neighbouring structures. It has been suggested[1] that an atlas of transverse frozen sections of the human trunk and limbs might provide useful information upon which to use the data of "stereometry," but as the tissues vary so much in thickness and as there are so many sources of error the value of such would be very doubtful. To this there is the exception of the eyeball, which varies in dimensions within limits so narrow that the cross-thread localiser of Mackenzie Davidson has been of untold value.

Some time ago I had on the X ray table a patient, paraplegic, in whom a bullet was found in the lumbar region 1 centimetre to the left of the spinous process of the fourth lumbar vertebra. The wound of entrance was slightly to the left of the second lumbar spine, and there were indications of fracturing of the lamina of that vertebra. Localisation by a simple method revealed the fact that the bullet lay at a depth of $4\frac{1}{2}$ centimetres, and the question to be decided was whether the bullet lay in the canal or dorsal to the lamina. Clinically the paraplegia suggested the former, but, of course, it was conceivable that the bullet having fractured the lamina of the second lumbar vertebra had glanced down and lay separated from the canal by the thin plate of bone. It will be at once understood that a variation in the thickness of the tissues overlying the spinous process, or in the length of that process by about half a centimetre (i.e., the thickness of a lamina), made all the difference as to whether the bullet lay in or out of the canal. Obviously the data supplied were little if any help.

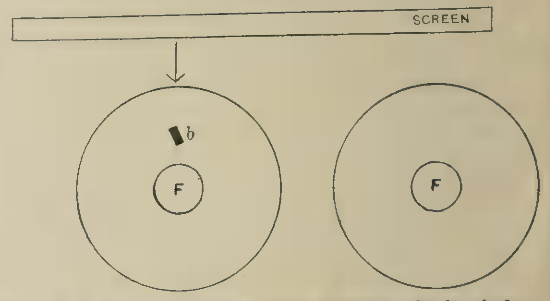
Where is the radiographer who has not, without over-fatiguing his mental faculties, thought out for himself a method of localising foreign bodies, but of what real value is a very exact measurement? When the surgeon has discovered the bullet it may be found that the radiographer was correct to within a few millimetres, yet before the commencement of the extraction the information given could at the most give a very imperfect idea of the whereabouts of the offender. Thus it is that the surgeon has called to his aid the "telephone probe," and some enthusiasts have gone so far as to say that in the near future no surgeon will attempt the removal of a foreign body without its aid. A probe, whether telephone or otherwise, is a bad instrument at least in recent or septic cases, and in a war hospital it may safely be dispensed with. Operating surgeons will be only too ready to agree that localisation still leaves much to be desired, and for reasons some of which have been given above.

FIG. 1.



This figure illustrates sections, say, of the right and left thighs with a bullet (*b*) to the outer side of one. The arrow indicates the position of the incision and the plane of the forceps parallel to the screen. F, Femur.

FIG. 2.



Illustrating sections as before, and showing a foreign body (*b*) in front of the femur (F). The arrow indicates the position of the incision.

The method of removing foreign bodies on the X ray table while not overcoming these ills holds so many advantages that it becomes impossible for an experienced operator to fail in the removal of one in an accessible situation. The advantages of being able to see the object of the search whenever you please are enormous, and this, combined with the intelligent appreciation of the principles of radioscopic localisation as described in my last two communications on this subject,[2] makes a tremendous difference on the speed of an extraction and the certainty of success.

But it must not be supposed (as happens here frequently among those watching an operation) that it is as easy as it looks, and here I may be permitted to mention how difficulties arise in this method of working. In the first place, it is not possible on the X ray table to put your patient into all the positions permissible on the ordinary table for the reason that the screen must always be considered. In operating on the upper part of the thigh the patient must be either on his back or his face in order that the opposite hip may not interfere with the screen. Likewise, in an operation on the side of the chest or axilla, you must choose the diameter which gives the best view, and, again, the position must be dorsal or ventral. Here arises the difficulty. If a bullet, for example, be situated on the outer aspect of the upper end of the thigh the forceps must approach it in a plane parallel to the plane of the screen. (See Fig. 1.) Where it is possible to make the incision over the apparent position of foreign body on the skin the operation is a matter of seconds, as it is practically impossible with the foreign body carefully "centred" to miss it. (See Fig. 2.)

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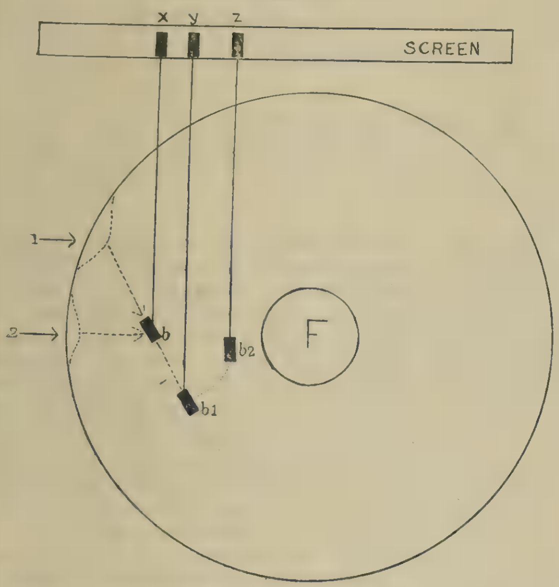
[1] Some Principles of X Ray Localisation, W. Cotton, M.D., Practitioner, April, 1915.

[2] The X Ray Theatre in War Hospitals, THE LANCET, April 24th, 1915, p. 854; Report on a Few Cases illustrating the Removal of Foreign Bodies on the X Ray Table, THE LANCET, May 15th, 1915, p. 1018.

How, then, are we to find the most suitable site for the incision in cases such as are diagramatically represented in Fig. 1? The method which I adopt might be described as that of "transmitted impulse": the part concerned is systematically "prodded" with either the finger or forceps under the rays, and the movements of the foreign body are studied. For this purpose I use the business end of a pair of "Spencer Wells" forceps. Working systematically from above downwards in a plane parallel to that of the screen, impulses are conveyed *viâ* the soft parts to the foreign body, and when the point of maximum movement or excursion of this is attained the corresponding position on the skin is noted. Here, if possible, the incision should be made, but if this is not convenient the near vicinity should be selected. The sudden increase in the excursion of the foreign body noted on reaching the correct lateral plane is diagrammatically explained in Fig. 3. This method, though apparently unscientific, is astonishingly accurate. A little experience will indicate the cases to which it is applicable, but briefly these are the upper part of the thigh, the side of the chest wall, the axilla, the scalp, and the face. Small foreign bodies in the scalp and face can be well located in this way. The head under the screen is slowly rotated, so that merely the thickness of the tissues overlying the bone can be inspected. When the foreign body is seen it can be located by the method just described. Here it is now a rule to remove all fragments, however minute (within reason). Many might be well left alone, but occasionally as a result unpleasant things happen. A considerable time ago I had a patient in whom the side of the face was "peppered" with minute pieces of shell. These were thought to be so trifling that it was decided merely to apply fomentations. Intense œdema of the eyelids and conjunctiva supervened, which only ceased with the removal of a minute foreign body which had slightly splintered the external angular process of the frontal bone.

FIG. 3.

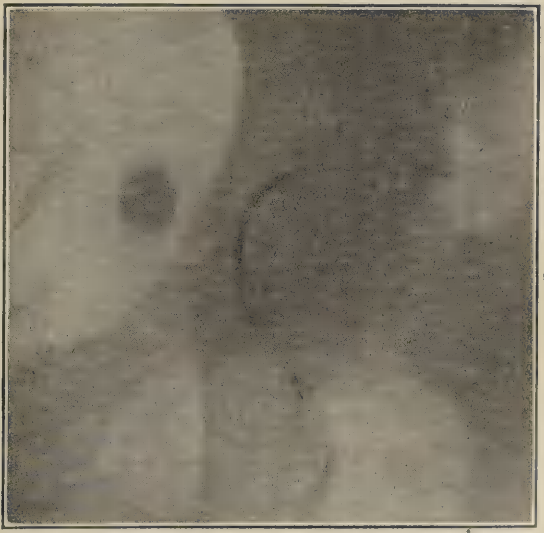


The figure represents section of the thigh; F, femur. Impulses delivered *viâ* the tissues to the foreign body at positions 1 and 2 may cause an equal amount of actual movement thereof. The apparent movement on the screen is, however, much less in 1 than in 2. The sudden accession of movement seen on reaching the correct lateral plane is thus explained. (For purposes of simplicity the rays are represented as being parallel.)

b, Foreign body in resting position. b_1, Foreign body after impulse at 1. b_2, Foreign body after impulse at 2. Screen: X-Y = Apparent distance travelled by *b* on delivery of impulse at 1. X-Z = Apparent distance travelled by *b* on delivery of impulse at 2.

The method of removing foreign bodies on the X ray table is thus not a substitute for localisation but a combination of localisation and extraction. In difficult situations I still employ stereograms as accessories, but detailed measurements are never made. Foreign bodies in the near neighbourhood of bones are easily removed because their position with regard to fixed landmarks is easily and accurately given. In this method, as will be understood from my earlier communications, the forceps point constitutes a fixed point of known position, and the study of its movements relative to those of the foreign body constitutes the secret of the speed and success of the method.

FIG. 4.



Showing foreign body in the neighbourhood of the ischial spine.

Two cases upon whom I operated recently are of sufficient interest, I think, to justify description. They exemplify in a striking manner all that has been claimed for this method. Both showed old and healed wounds, and it is always a matter of the greatest difficulty in these to decide if their complaints are real, imaginary, or assumed. In any case the quickest way usually to get them back to the firing line is, if possible, to remove the source of the trouble.

CASE 1.—A Belgian private in the 2nd Carabiniers was wounded by a shrapnel ball at Werchter, near Louvain, on Sept. 12th, 1914. He was sent to the military hospital at

Antwerp, then to hospitals at Ostend, Portsmouth, and Bournemouth. When at Bournemouth he had an operation lasting three hours without success. There he was kept for four and a half months and then returned to his depôt in France, after which he was sent to us to have the ball removed.

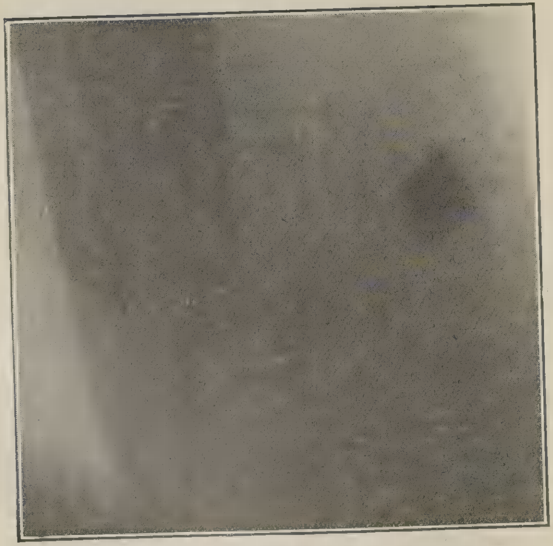
Upon admission he was somewhat lame and complained of pain on walking and inability completely to extend his thigh. Examination revealed the cicatrised wound of entrance on the left buttock 1 inch to the left of the middle line and 2 inches behind the rectum. There was an old operation scar on the buttock some 4 inches long. On being put on the radioscopic table he sarcastically remarked that this was the eighth time and would probably be as fruitful in results as the others. The radiogram revealed a ball in the neighbourhood of the ischial spine. (Fig. 4.)

At the operation under spinal anæsthesia an incision 2 inches long was made alongside the old one and the fibres of the gluteus maximus were exposed. Under the rays a pair of long closed forceps were pushed down and the ball grasped and extracted. The operation lasted 14 minutes. At the moment of writing (the fifth day) the patient is walking in the garden of the hospital.

CASE 2.—A private in the Grenadiers, wounded on the same day and at the same place as the preceding patient, was treated at hospitals in Antwerp, Ypres, Havre, and Tours. Radiographic examinations were made on seven different occasions, but no operation was attempted.

On admission here the patient was somewhat lame and complained of pain in the lower part of the thigh. Upon examination the cicatrised wound of entrance was found on the outer side of the thigh at its middle. The radiogram (Fig. 5) revealed a flattened-out shrapnel ball embedded in the hamstring muscles and a second one lying in the medullary cavity of the femur. The opening in the bone made by the ball in its passage is seen some 4 centimetres above the ball.

FIG. 5.



Showing (1) a flattened-out shrapnel ball embedded in the hamstring muscles; and (2) one lying in the medullary cavity of the femur.

At the operation the femur was exposed by an incision on the antero-external aspect of the thigh. The opening in the femur was readily found, but it was impossible to approach the ball by that route. Guided therefore by the rays a $\frac{3}{4}$-inch trephine was placed on the bone immediately over the foreign body and a circle of bone removed. The ball was extracted with a pair of sinus forceps through an opening which just accommodated it. The flattened-out ball lying among the hamstring muscles was removed *viâ* a short posterior incision. Up to the present (the fifth day) the patient's progress has been satisfactory in every respect.

The outstanding feature of the method is surely its simplicity. As a rule, the radiographer knows little about surgery and the surgeon less about radiography, but the profound knowledge of this is not an essential to the successful performance of projectile extraction.

In conclusion, it is gratifying to know that the method is attracting the attention it deserves. Those competent to pass an opinion who have seen foreign bodies extracted here have nothing but praise for a method so speedy and so successful. Adverse criticism comes only from those who have neither seen nor practised, and who are thus scarcely competent to judge.

Hôpital Sophie Berthelot, Calais.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON A MODIFIED FORM OF COLPO-PERINEORRHAPHY.

BY JAMES OLIVER, M.D. EDIN., F.R.S.E.

A PATIENT, aged 42, came under my care recently complaining of protrusion of the womb from the front passage and of the lower bowel. The protrusion of the womb had been in existence for nearly 20 years, and when I saw her the replacement of the uterus and vaginal walls was effected with some difficulty. The vaginal orifice was naturally very much relaxed. I performed on her a modified colpo-perineorrhaphy, and when the wound was quite healed the patient had a ring pessary placed, and thereafter neither the uterus nor the bowel caused her any inconvenience, and she was able to walk about in perfect comfort.

To most patients the retention of the prolapsed uterus and vaginal walls by means of a Zwanke pessary, or a pessary which has to be supported by a band encircling the abdomen, is irksome and inconvenient, and an operation which enables them to wear a watch-spring ring pessary with greater success and comfort is a decided boon. The modified colpo-perineorrhaphy, which I have found useful under such circumstances, consists in splitting the recto-vaginal septum close to the posterior margin of the vagina by means of perineal sharp-pointed scissors. The point of the dependent blade of the scissors is inserted close to the extreme left margin of the vaginal orifice and carried transversely under the skin to the extreme right margin. The same point of the scissors is then inserted under the skin at the extreme left margin of this transverse incision and carried upwards and slightly outwards for an inch or more, dividing the skin at the same time. A similar severance of the skin is effected on the right side, and an anterior or vaginal flap is thereupon dissected up to an extent varying with the requirements of each individual case, the left and right corners of this flap being held forward at the time by two pairs of pressure forceps. This flap is then divided centrally and vertically down to the rectum by the scissors. From the inner side of each of these vertically divided flaps a triangular piece is removed by snipping with scissors from the centre of the rectum upwards and outwards to the anterior limit of the two vertical and lateral incisions.

With a knife an incision skin-deep is then made posteriorly from the left margin of the original transverse incision to a spot close to and about the middle of the anterior portion of the sphincter ani muscle. A similar skin-deep incision is made on the right side and the V-shaped piece of skin thus outlined is dissected off. The raw surfaces thus created are then stitched in three layers, and as the greater portion of the sutures are buried I prefer to use 40-day No. 1 and No. 3 Van Horn catgut for stitching up. A curved needle carrying a short length of No. 1 catgut is inserted at the anterior limit of the incision on the left side avoiding inclusion of the skin and the mucous membrane, and the same armed needle is carried and made to traverse in a similar manner the anterior limit of the incision on the right side. This suture is then tied and left long, and held forward by a pair of pressure forceps. This act brings the raw mucous membrane edges of the vaginal flaps together centrally, and without transfixing the vaginal surface of these flaps the central cleft is closed by a continuous No. 1 catgut suture, beginning at the rectum and extending forward. By means of a continuous buried suture of No. 3 catgut, beginning posteriorly close to the sphincter ani and extending forward, the deep portion of the wound is now brought together, and thereafter the skin—beginning posteriorly—and the entire wound closed by a continuous No. 1 catgut suture, and just before tying this suture the catgut suture originally inserted at the anterior limit of the wound is cut short.

In some cases the need for a ring pessary is obviated by combining amputation of the cervix uteri with the aforesaid operation.

Harley-street, W.

A CASE OF PAROXYSMAL HÆMOGLOBINURIA.

By HAROLD E. THORN, M.R.C.S., L.R.C.P.LOND.,
SURGEON, R.N.

A. B., aged 18, in H.M.S. *Britannia*, came under observation on March 22nd complaining that seven days previously his urine had suddenly become very dark in colour. This lasted for three days and was succeeded by an interval in which he passed urine of normal colour. The same deep tint, however, returned, and he noticed it for two days previously to reporting himself. Whilst each of these attacks lasted there was pain in the lumbar region on both sides. On the evening of March 22nd the temperature was 99° F., but on every other day when under observation it was normal.

On examination the patient appeared very healthy. The urine was found to be dark in colour with a dirty deposit, which did not show any definite formation under the microscope. No blood cells could be seen. The reaction was acid and the specific gravity 1032. There was a large amount of albumin present, but no albuminometer was available for its definite estimation. The guaiacum blood test was strongly positive.

The patient was put to bed and the next day he had some lumbar pain, but the temperature was normal. The urine was just pink and there was only a trace of albumin. The reaction was still acid; specific gravity 1033. Two white blood corpuscles, but no red cells, were found in the deposit. Tubercle bacilli were not found. The back did not show any abnormal physical signs. The heart and lungs were normal. The systolic blood pressure was 120 mm. of mercury. The fundus oculi was also normal. Poikilocytosis was found and diminished rouleau formation in a blood film. There was no œdema of the limbs or back. On March 24th the urine had returned to normal and the patient was allowed to get up. Until that day he had been on light diet, but he was then allowed ordinary food, with the exception of rhubarb. Two days later (March 26th) the lumbar pain had disappeared. He was sent back to duty. Since then he has had two similar attacks, but was not seen by a medical officer owing to the fact that he went on leave for two weeks. He says that the third attack started on April 1st after a long walk, and that the fourth attack followed similar exercise within the next fortnight. He has now been quite well for eight weeks.

The patient is fond of taking cold baths, but these have been forbidden him. The attacks of paroxysmal hæmoglobinuria seem to follow exercise in every case, but a definite cause cannot be found. The remarkable thing about the case is the large amount of albumin which was present in the urine on the first day on which the patient came under observation and the rapidity with which it disappeared.

H.M.S. *Britannia.*

Medical Societies.

ROENTGEN SOCIETY.

X Ray Localisation Methods.—Discussion on Methods of Protection of X Ray Operators.

THE annual general meeting of this society was held on June 1st at the Cancer Hospital, Fulham-road, Sir **ALFRED PEARCE GOULD** being in the chair.

Captain J. H. **SHAXBY**, R.A.M.C. (T.), read a paper on X Ray Localisation Methods. He described two methods which had proved very serviceable in determining the position of foreign bodies, the first in certain special cases, the second for general work. It was sometimes impossible, he said, from a determination of the depth alone of a foreign body, to decide whether it lay above or below a broad flat bone such as the scapula. The remedy was to take two photographs from widely different angles of view, and the present method aimed at securing this in the two plates of the localisation. Briefly, it differed from the usual methods in two respects: (1) the anticathode, instead of being more or less in the vertical line through the foreign body, was placed markedly to one side, so that the views were both oblique; and (2) the displacement of the bulb between the two exposures was in a line perpendicular to the photographic plate, instead of parallel to it. As a result there was a considerably greater displacement of the shadow of the foreign body relatively to the adjacent bone than was given by the ordinary process. A simple formula, involving the distances of the two shadows from the point on the plates vertically over the focus spot, gave the position of the foreign body, or a thread method similar to Sir J. Mackenzie Davidson's might be employed. The second photographic plate might be raised equally with the bulb, keeping the distances of the plates apart fixed, or it might be placed in the same position as the first plate. The point alluded to, exactly above the focus spot, was determined by a fuse-wire grid in a fixed position over the anticathode; superposition of the plates and examination of the unequal-sized shadows of the wires made it possible accurately to find the required point. With apparatus which permitted of ready raising and lowering of the bulb the method was quick and simple, and the displacement of shadows large and correspondingly easy to measure accurately. For ordinary cases the usual procedure of moving the bulb parallel to the plate was followed, but the addition of a small auxiliary apparatus did away with the need for measuring the distance the bulb moved and also the distance from its focus spot to the negative. The appliance consisted of a small frame set up perpendicularly to the photographic plate and made of material transparent to X rays; this supported a series of parallel lead wires, arranged very much like the laths of a "Venetian" blind let down a little crookedly (Messrs. Newton and Wright, Wigmore-street, were the makers). The apparatus was mounted so that it could be easily clipped on to a plate envelope or casette, one end of the first wire being as close as possible to the plate. The slope of the wires was such that the other end of this wire was 1 cm. from the plate holder; the second wire, parallel to the first, lay 1 cm. from the plate at one end and therefore 2 cm. from it at the other. The distance of the third wire ranged in the same way from 2 to 3 cm., and so on for any convenient number of wires. The negative after the two exposures of the localisation showed two shadows of the foreign body and also two shadows of the lead wires. With a pair of divider compasses the displacement of the bullet shadows was set off, and the compasses were then moved to the wire shadows. If it was found, for instance, that a point a quarter of the way along one shadow of the fourth wire was at the set-off distance from the other shadow of the same point, then, very obviously, the bullet was at the same distance from the plate as this determined point on the wire system—a distance, that is, of 3·25 cm. The only care required in affixing the appliance to the plate was to put it so that the two shadows fell on opposite sides of its base, so that they did not overlap and give a confused pattern. For intensifying screen work or long exposures it was not advisable to expose the localiser throughout, or the density would become too great for convenient examination; the part of the plate where the wire shadows were to fall might be covered by a metal screen during the greater part of the process, the localiser being slipped into place only for the end of the first exposure and the beginning of the second.

Mr. SIDNEY RUSS, D.Sc., in opening a discussion on Methods of Protection of X ray Operators, drew attention to the special dangers attending X ray screen examinations. Efforts were made to protect the operator by enclosing the X ray bulb in a box covered with absorptive material, except in the path of the vertical rays used; the fluorescent screen over which the operator leant in order to interpret the image there presented was backed by lead glass to protect the face of the operator; gloves were also provided for use when manipulations of the patient had to be made while irradiation was going on. He directed attention to the extent to which the rays were cut off by the devices at present employed. He had recently made some measurements upon the percentage of radiation transmitted through various samples of protective material, which were at present being used in the army X ray installations. Considering first of all the bulb, it was usual for this to be enclosed in a wooden box lined within or covered by lead rubber or lead itself. There was no uniformity in the thickness or quality of lead rubber employed, with the result that the percentage of stray radiation was in some cases as low as 0·1 per cent., and in others as high as 5 per cent., of that of the primary beam of rays. With regard to the protective lead glass used in the fluorescent screens, the degree to which the rays were absorbed was found to depend very much upon the quality of the glass. A small increase in the amount of lead contained in the glass made a very large difference in its absorbing power, so that the quality of the glass in this respect was an important consideration. It was found by measurement that with the thickness of glass frequently in use at present as much as 4 per cent. of the energy of the beam reaching the fluorescent screen was received by the operator. What, then, were reasonable limits of safety in this respect? Dr. Russ thought it difficult for those engaged in X ray work to realise the enormous amount of radiation given out by modern bulbs; this was partly because the methods in use for the measurement of X rays were relatively gross methods. When an instrument such as an electroscope, which was a very delicate detector of X rays, was moved about in the neighbourhood of an X ray bulb which was accorded a reasonable amount of protection, it was astonishing to find what an amount of stray radiation there still was. It should be remembered that whenever this stray radiation was present the air became highly ionised, and upon this the ordinary methods of ventilation had no effect. It did not seem unreasonable to hope that in the not too distant future due attention would be paid to the atmosphere in which the radiologist conducted his examinations.

Dr. N. S. FINZI referred to the enormous output by the modern X ray bulb, not only of primary but also of secondary radiations. This was shown by an interesting experiment. If a tube were placed in a protective box that completely enclosed it except for the opening guarded by the diaphragm, very little secondary or other radiation was observable so long as the diaphragm was quite closed, but the moment the latter was opened, though only a very little, a strong secondary radiation could be detected anywhere in the immediate neighbourhood of the tube. This showed that while the usual protective box cut off nearly all the primary radiations there were the secondary rays to be considered which might be a great danger to the radiologist.

Mr. J. H. GARDINER, F.C.S., gave the results of experiments to determine the quality of the secondary radiations given off by various materials. Some surprising results were secured; for instance, paraffin wax gave off a more penetrating radiation than copper or silver. To him it seemed that any method of protection to be efficient must take account of the secondary radiations.

Dr. G. B. BATTEN considered this matter of X ray protection as one of the first importance at the present time when so many radiologists were working many hours every day in the military hospitals, and one of the greatest dangers was that in the absence of any definite rules it was more than likely that the protective measures in many of the X ray outfits supplied to the War Office fell short of what was desirable. He considered that a committee of the Roentgen Society should formulate a set of rules for X ray protection which would be a guide to makers and users of X ray apparatus.[1]

At the close of the meeting Dr. W. IRONSIDE BRUCE gave a demonstration of his method of accurately finding a foreign body in the tissues after it has been localised by the X rays. The apparatus was described in THE LANCET of Feb. 6th, 1915, p. 275.

LONDON DERMATOLOGICAL SOCIETY.—The annual general meeting of this society was held on June 15th at St. John's Hospital for Diseases of the Skin. Dr. W. Griffith, the President, presented the council's annual report. The balance sheet, which was presented by Dr. W. Knowsley Sibley, the honorary treasurer, was received and adopted. The following officers were elected for the ensuing year:—President: Dr. J. L. Bunch. Vice-Presidents: Dr. Morgan Dockrell and Dr. W. Griffith. Honorary treasurer: Dr. W. Knowsley Sibley. Honorary secretary: Dr. Simonds Gooding. Council: Dr. M. K. Hargreaves, Dr. R. Prosser White (Wigan), Mr. A. T. Bremner (Leicester), Mr. C. R. Kempster, Mr. C. H. Mills, and Mr. E. G. Reeve.—At the clinical meeting which followed a series of interesting cases were exhibited. Dr. Morgan Dockrell showed a case of Pityriasis Rubra Pilaris, and demonstrated the histological sections.– Major E. G. Ffrench, R.A.M.C., read a paper entitled "The Substitutes for Salvarsan and Neosalvarsan." He said that according to a report in THE LANCET of April 10th, 1915, by the secretary of the National Medical Research Committee, the chemistry of kharsivan and neokharsivan was said to be identical with salvarsan and neosalvarsan, the details of their preparation being identical. He said that he did not propose to discuss the chemistry of the preparation of these products, but rather to confine himself to observations made and the clinical results obtained after their use. He also mentioned a third substitute—viz., novarsenobenzol "billon," which was a French preparation manufactured by Poulenc Frères. Billon, he said, was a darker yellow colour than neosalvarsan, a yellow powder somewhat darker than the 914, dissolving readily in water and forming a clear yellow solution. For use it was dissolved in 10 c.c. of freshly distilled water and injected intravenously immediately afterwards. Neosalvarsan formed a clear yellow solution and dissolved readily. He first saw this concentrated solution tried with success by Professor John Fordyce, of the City Hospital, New York, in 1913, and since then he had adopted the method. Neokharsivan was a reddish-brown powder and dissolved quickly, forming a reddish-brown solution. Kharsivan was a yellow powder which did not dissolve readily in water. He recommended the following procedure. The powder was poured on to three dozen glass beads in a large sterile glass flask, the latter being shaken to allow the powder to mix with the beads; 20 c.c. of saline made of freshly distilled water was then added and the flask shaken with a swirling motion for a few seconds; more saline was then added and the flask shaken for about half a minute; finally the remaining portion of the 100 c.c. of saline was added and the flask was shaken again but not too vigorously. A clear yellow solution was the result, and the time taken was about three minutes. The solution was then neutralised with a 4 per cent. solution of sodium hydrate, the quantity required to dissolve the 0·6 grm. being 4·8 c.c. After neutralising another 150 c.c. of saline was added, making the total amount 250 c.c. The strength of the salt solution used was 0·9 per cent.—that is, 8·5 grm. of sodium chloride to 1 litre of distilled water. It was injected at body temperature. With regard to neosalvarsan, neokharsivan, and billon, the same amount of water, 10 c.c., was used to dissolve a moderate or full dose, the solution being injected cold owing to the greater tendency to rapid oxidation. The method of injection was as follows. A 10 c.c. record syringe was used; the barrel was filled and the needle introduced into the vein, the piston being withdrawn slightly so as to see if the needle had entered the lumen of the vessel. If it had, the piston might be gradually pushed home. The skin over the vein was painted with a solution of iodine and chloroform, 1/15, before and after the operation, and a piece of sterile gauze was placed over the puncture and sealed with collodion. The day before injection all the organs and urine of the patient were examined, and pil. hydrarg., gr. 4, given in the evening and mist. alba, 1 oz., in the morning. At 7.30 A.M. breakfast, consisting of tea and bread-and-butter, was allowed, and the injection was given in the forenoon. If there were no immediate after-effects the patient was given tea and bread-and-butter at 4.30 P.M. Ordinary hospital dinner was allowed at 7.30 P.M. if the patient still remained free from temperature, vomiting, headaches, &c. He was kept in bed until the following morning. The routine method of dosage was to give three intravenous injections of salvarsan or neosalvarsan at intervals of ten days. The day after the first injection mercurial cream, grm. 1, was injected into the buttock and carried out for nine consecutive weeks. 0·6 grm. salvarsan or 0·9 grm. neosalvarsan was nearly always given as the first dose; 0·4 grm. salvarsan or 0·6 grm. neosalvarsan was given as a second dose unless the patient had only a moderate dose at first, when a full dose was given. A full dose was given for the third injection. The same procedure was being adopted with the substitutes kharsivan, neokharsivan, and novarsenobenzol. Major Ffrench said that over a hundred cases, comprising primary, secondary, and tertiary, had now been treated with the substitutes, and that they had come to the conclusion that kharsivan and neokharsivan were somewhat more toxic than salvarsan and neosalvarsan. He gave the following percentages of immediate after-effects produced. Of 136 injections of kharsivan 60 per cent. gave no reaction; 27 per cent. gave slight reaction, such [illegible] headache, slight temperature, vomiting, rigor, and diarrhœa; and 13 per cent. gave severe reaction of the symptoms mentioned. Of the 124 injections of salvarsan, 63 per cent. gave no reaction, 33 per cent. slight reaction, and only 4 per cent. severe. Of the salvarsan cases, 20 per cent. were primary, 75 per cent. secondary, and 5 per cent. tertiary. Of the 25 injections of neokharsivan, 32 per cent. gave no reaction, 40 per cent. slight reaction, and 28 per cent. severe; 20 per cent. were primary, 48 per cent. were secondary, and 32 per cent. were tertiary. Compared to neosalvarsan, of the 75 injections 72 per cent. gave no reaction, 21 per cent. slight, and only 7 per cent. severe. The primary were 40 per cent., secondary 26 per cent., and tertiary 34 per cent. Of novarsenobenzol, 42 injections were given; 76 per cent. gave no reaction, 19 per cent. slight reaction, and 5 per cent. severe. There were 12·5 per cent. primary, 12·5 per cent. secondary, and 75 per cent. tertiary. The greatest number of severe reactions occurred in the secondary and late primary cases. He said that it was most satisfactory to state that they had not experienced any serious results in the use of these substitutes, and that they believed that kharsivan and neokharsivan were very excellent substitutes (for salvarsan and neosalvarsan), and that so far as their experience had gone they might be safely recommended for the treatment of all forms of syphilis.

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[1] This suggestion was adopted and the council of the Roentgen Society have undertaken to give effect to it.

Reviews and Notices of Books.

Heredity and Environment in the Development of Man.

By EDWIN GRANT CONKLIN, Professor of Biology in Princeton University. London: Humphrey Milford. 1915. Pp. 533. Price 8*s.* 6*d.* net.

THIS interesting volume on an ever-expanding subject is composed of the Norman Wait Harris Lectures for 1914, which were given at Northwestern University and subsequently repeated at Princeton University. The lectures were founded in 1906 through the generosity of N. W. Harris, of Chicago, and are to be given annually. Such diverse subjects as personalism, university administration, the age of mammals, democracy and poetry, the milk question, and the constitution of matter have already been dealt with by previous lecturers. The purpose of the lectures is "to stimulate scientific research of the highest type and to bring the results of such research before the students and friends of Northwestern University, and through them before the world. By the term 'scientific research' is meant scholarly investigation into any department of human thought or effort without limitation to research in the so-called natural sciences, but with a desire that such investigation should be extended to cover the whole field of human knowledge."

The text consists of six chapters or lectures, illustrated by nearly 100 figures. The subjects dealt with are: (1) Facts and Factors of Development; (2) Cellular Basis of Heredity and Development; (3) Phenomena of Inheritance; (4) Influence of Environment; (5) Control of Heredity, Eugenics; (6) Genetics and Ethics.

As a result of the doctrine of organic evolution it has become plain that man's place in nature has been clearly defined, and the resemblance between men and the lower animals has come to have a new significance. It is recognised that life processes are everywhere the same in principle, though varying greatly in detail, so that all the general laws which apply to animals and plants apply to man. It is on this foundation that the recent wonderful advances in experimental medicine have become possible.

If the origin of species was the greatest biological problem of the past century, assuredly the origin of individuals is the greatest biological subject of the present one. This is the author's theme. He deals first with the phenomena of development, including such trite subjects as the germ cells, fertilisation, cleavage, embryogeny, organogeny, oviparity and viviparity, and development of functions. He shows that every living being is a complex system in dynamic equilibrium and manifests the following features. It contains protoplasm, and its equilibrium is maintained by the physiological processes known as metabolism, reproduction, and irritability. The development of functions goes hand in hand with the development of structures; indeed, "function and structure are merely different aspects of one and the same thing —namely, organisation." As to the origin of the mind, or rather of the soul, "the only possible scientific position is that the mind (or soul) as well as the body develops from the germ....... The mind develops by gradual and natural processes from a simple condition which can scarcely be called mind at all."

Further, says the author, there is no more reason for supposing that the mind is supernaturally created than that the body is, the mind being related to the body as function is to structure. The development of the mind is treated under the following heads: (*a*) Sensitivity; (*b*) tropisms, reflexes, instincts; (*c*) memory; (*d*) intellect, reason; (*e*) will; (*f*) consciousness. The first lecture is brought to a close by a short chapter on factors of development, including an account of the doctrines of preformation and epigenesis. The author's teaching may be thus summarised: The intrinsic factors of development reside in the organisation of the germ cells; the extrinsic are represented in environmental forces and conditions; the intrinsic factors are commonly called heredity; they in the main direct and guide development, while the environmental factors furnish the conditions in which development takes place and modify, more or less, its course.

In discussing the cellular basis of heredity and development the author's position is that all the phenomena of life, including heredity and development, are cellular phenomena in that they include only the activities of cells or of cell aggregates. Heredity originally meant "heirship or transmission of property from parents to children." In the field of biology it has been defined erroneously, says the author, as "the transmission of qualities or characteristics, mental and physical, from parents to offspring." We are told roundly that no "qualities" or "characteristics" are "transmitted" as such from one generation to the next. The following is the author's definition and summary: "Heredity may be defined as the appearance in offspring of characters whose differential causes are found in the germ cells. Heritage is the sum of all those qualities which are determined or caused by this germinal organisation. Development is progressive and coördinated differentiation of this germinal organisation, by which it is transformed into the adult organisation. Differentiation is the formation and localisation of many different kinds of substances out of the germinal substance, of many different structures and functions out of the relatively simple structures and functions of the oosperm." The germ is thus the undeveloped organism which forms the bond between successive generations; the person is the developed organism under the influence of environmental conditions—"the person is merely the carrier of the germ plasm, the mortal trustee of an immortal substance."

An elaborate account of germ cells is given, and the significance of the successive events is discussed under the headings fertilisation, cleavage and differentiation, origin of the sex cells, and sex determination. The author asserts that sex is irrevocably determined at the time of fertilisation. As to the mechanism of heredity, as contrasted with the mechanism of development, it consists in the formation of particular kinds of germ cells and in the union of certain of these cells in fertilisation. Germ cells have a certain "specificity." Germ cells of different individuals are not all alike, and such differences are due to one or more differentiating causes or factors—intrinsic or extrinsic—though experience has shown that they are generally intrinsic in the germ. The author shows that in woman, where "there are probably 48 chromosomes and after synapsis 24 pairs of maternal and paternal ones, the possible number of permutations in the distribution of these chromosomes to the different egg cells would be 2^{24}, or 16,777,036, and the possible number of different types of fertilised eggs or oosperms which could be produced by a single pair of parents would be $(16{,}777{,}036)^2$, or approximately three hundred thousand billions." It would seem as though the production of unique individuals were the chief purpose and result of sexual reproduction. That the chromosomes play a large and dominant rôle is admitted, and the author compares their behaviour in maturation and fertilisation to the shuffle and deal of cards in a game and apparently with the same object—viz., never to have the same distribution twice. A careful exposition is given of the reasons for assuming that the chromosomes are important factors in heredity and differentiation.

As to the phenomena of inheritance, the author says that "like does not produce like but only somewhat like." Hereditary resemblances are first dealt with, including racial characters and individual characters. Under the latter heading we find interesting references to morphological features, teratological, pathological, and physiological peculiarities, and psychological characters. To Francis Galton is due the credit of being one of the first to bring order out of chaos by dealing singly with traits or characters instead of treating all together. "Mutations" and "fluctuations" are dealt with, and in the end the conclusion is arrived at that every individual is unique—every living being apparently is the first and last of his identical kind. The whole chapter on Mendelism is excellent and worthy of the most careful study as a sound, terse, and luminous exposition of this very practical doctrine; indeed, the author regards "the principles of heredity as established by Mendel as almost as important for biology as the atomic theory of Dalton is for chemistry."

The influence of environment on heredity, or, in the words of Galton, the two sets of factors, "nature" and "nurture," are considered fully, and the author finds that developed characters, whether "acquired" or not, are never transmitted by heredity, the hereditary constitution of the germ not being changed by changes in such characters. It is possible to guide phenomena of heredity and evolution. Accepting this statement, the author gives in the fifth chapter an interesting account of the "control" of heredity and of eugenics, dealing with such well-known subjects as the influence of environment in producing new races, artificial selection, methods of modern genetics, and control of human heredity. The last chapter, on genetics and ethics, or at least a portion of it, was published in 1913 under the title "Heredity and Responsibility."

We have great pleasure in commending the study of these instructive and suggestive lectures to all who are interested in the problems of heredity and environment as they affect the development of animals and man. Much old ground is necessarily traversed, but the comprehensive way in which the subjects are treated makes these repetitions illuminating.

The Chemistry of Colloids.

By W. W. TAYLOR, M.A., D.Sc. London: Edward Arnold. 1915. Pp. 328. Price 7*s.* 6*d.* net.

THE study of the chemistry of colloids grows in importance day by day, and it seems strange that until quite recent years very little progress has been made since Graham's experiments in the early "sixties." But the recent progress made has been very real, so much so that the chemistry of colloids has now many applications in the industries. After a very clear account in general of the colloids, and a sketch of the researches which have led up to the present position of the study, Dr. Taylor reserves four chapters to their applications. Thus, amongst the semi-colloids are included casein and the soaps. He then proceeds to the modern dyes, discussing their colloid nature, the mutual precipitation of the colloid dyes by other colloids, mordants, lakes, and so forth. Then follows a chapter on tanning, the soil and its purification, in which colloidal processes are undoubtedly concerned, if only in a mysterious way. Lastly, a very interesting chapter is the final one on the applications of colloid chemistry to physiology and biology, as evidenced in the rôle of hæmoglobin in the blood, the action of enzymes, the phenomena of catalysis, and agglutination. All these questions claim attention from the point of view of colloidal chemistry, and this book will be cordially welcomed as the first English text-book on the subject, and as one that sets up an admirable model for others to work upon who, as researches develop, may be tempted to expand the subject.

A Text-book of Insanity and Other Mental Disorders. By C. A. MERCIER, M.D. Lond., F.R.C.P. Lond., F.R.C.S. Eng. Second edition. London: George Allen and Unwin, Limited. Price 7*s.* 6*d.*

WE remember Dr. Mercier to have defined science as order, system, organisation, arrangement —in short, as the recognition and application of law. His text-book was designed to make our knowledge of insanity in this sense scientific and to arrange the subject in accordance with an orderly system. The second edition which has now appeared carries the attempt farther, and aims to provide a systematic arrangement of the whole subject and of its several parts; and though Dr. Mercier's may not be the best arrangement, it is at any rate an orderly and systematic one pursued with considerable detail.

The first requisite for the study of a subject is to have a clear notion of the subject to be studied, and from the beginning we can see what Dr. Mercier would be at. Considering that it has hitherto been a general assumption, both in medicine and in law, that insanity is disorder of mind (an assumption which is widely held and is embodied in Acts of Parliament), the author strenuously contends that insanity has in common use several meanings which are not distinguished, and that in every one of these meanings the most important ingredient is disorder, not of mind, but of conduct. The argument is that what matters is not what a patient believes or thinks, but what he says and does. It is disorder of conduct on which the main emphasis is laid, and certain of its results are discussed and described in a way and with a fulness constituting, if memory serves us, new features in a book on insanity.

Disorder of mind is, however, an ingredient or constituent of insanity, and we agree with Dr. Mercier that the study of insanity should be preceded by a study of normal psychology. Experience appears to have convinced him that the study of the normal mind and the explanation of the constitution of the normal mind, as given in the text-books of psychology, do not serve the purposes of the student of insanity, and he formulates a new scheme of the constitution of mind specially adapted to the needs of the student of insanity. The scheme may be right or wrong, but among the causes of insanity usually recognised there are too many disconnected surmises, and Dr. Mercier's plan finds a place for those processes of mind whose disorders come under the notice of the physician. The causes of insanity are here reduced to two complementary and relative sets—heredity and stress—each of which is systematically treated, the manner in which they act as causes is suggested, and the stresses are arranged in a systematic manner. Classification is Dr. Mercier's aim here, and no classification of the causes of insanity hitherto proposed has been satisfactory. Dr. Mercier asserts that confusion and cross-classification arise from the failure to distinguish between the various meanings of the word insanity, which may mean a disease or may mean a symptom, and that when these meanings are disentangled, when symptoms are classified by themselves, diseases by themselves, and acute and chronic conditions by themselves, the difficulties of classification will be surmounted. Dr. Mercier suggests three valid arrangements free from cross-classification in substitution for a single arrangement in which the three are blended, but we are not certain that he will wholly escape the reproach of cross-classification. Confusion, too, may be introduced in one or two places by the use of terms with an unusual significance, or at any rate with a significance that is not generally accepted. In the course of the book some clinical types of insanity, hitherto, we believe, unrecognised, are described for the first time.

The book suffers from compression. The author tries to say too much in too small a space. He allows his criticism of his colleagues for acquiescence in the claims of the German school to become too apparent. He is impatient, because he has found it impossible to obtain recognition for the importance of disorder of conduct in relation to insanity, insanity being usually treated as disorder of mind even when psychology is seen to be at fault. He is sore because his views, which amount to a revolution in the concept of insanity and in the treatment of the subject, remain undiscussed. The book appears to have been written in an angry mood from title to index, as if the author were at enmity with every other writer on the subject, and the warning to examinees not to read the whole lest they should know more than their examiners is droll but very aggressive. Instead of an index, we find an argument why this should be missing. The gibe at the reviewers that the absence of an index will hamper their work has some point, for many books are in these days of gross over-production noticed in a perfunctory manner by critics whose knowledge of the contents is much derived from the "contents page." But when Dr. Mercier writes "To add an index to a book that is logically arranged is to take for granted that the reader is not intelligent enough to appreciate a logical argument," does he see that he may demand from his reviewer the perusal of the whole of his work? The author of a book is not necessarily the best judge of whether it is logically arranged, and no arrangement can necessarily be exactly the best one. A reviewer might look for a sequence of ideas which would seem logical to him, might find that sequence broken and conclude that some points were missing, when, in accordance with the author's view of logic, those points were considered elsewhere. In the absence of an index how is the reviewer to be assisted? Dr. Mercier is surely too reasonable to say "let him read the whole book and read it steadily and carefully," for that is an unfair demand on a reviewer: a man does not drink a bottle of wine steadily and carefully before saying if it is a sound and palatable fluid.

This is a pugnacious, dogmatic, and very clever book, and the general practitioner will certainly obtain from it valuable lessons as to his conception of insanity. It is readable from first to last.

The Diseases of Children.

Edited by Dr. M. Pfaundler, Munich, and Dr. A. Schlossmann, Düsseldorf. English translation edited by Henry L. K. Shaw, M.D., Albany, N.Y., and L. La Fétra, M.D., New York. Vol. VII. *Diseases of the Eye in Infancy and Childhood.* By Dr. Oskar Eversbusch, Munich. *Disorders of Speech and Phonation.* By Dr. Max Nadoleczny, Munich. London and Philadelphia: J. B. Lippincott Company. 1915. Pp. 499. Price 21*s.* net.

In the seventh volume of Pfaundler and Schlossmann's "Diseases of Children," translated by Dr. Shaw and Dr. La Fétra, the treatise on the Diseases of the Eye in Children, written by the late Dr. Eversbusch of Munich, is probably the most exhaustive which has appeared. It necessarily contains little which is not to be found in any of the larger text-books of ophthalmology, but it segregates the diseases which are found in children and thus serves a good purpose in emphasising this particular aspect of the subject. Whether the task was quite worth doing in this elaborate fashion is a matter of opinion, but at any rate it has been done well. The first chapter deals with congenital anomalies and deformities of the eye. It is a fairly complete account. Here and elsewhere authors are mentioned, but no references are given. The second chapter, entitled the "Development of the Infantile Eye," really deals with the anatomy of the eye in the child, and contains much information otherwise difficult of access and little known. The examination of children with ocular affections is treated rather scantily, a knowledge of the ordinary methods of examination being presumed. Then follow chapters on diseases of the eye and adnexa, arranged after the usual fashion of ophthalmic text-books. There is a special chapter on disturbances of pupillary movements. The discussion of the diseases is essentially clinical, very little reference being made to pathology. Treatment is very fully dealt with.

The second part of the volume is taken up with the consideration of a comparatively small but none the less important section of the diseases of children—viz., disturbances in the realm of speech. After a preliminary chapter on the development of the faculty of speech, viewed both physiologically and psychologically, the author proceeds to investigate its disorders by dividing them into two main groups—arrests of development of speech and disorders contracted after speech is acquired. In the former category are placed three subclasses—viz.: 1. Arrests of development on the peripheral sensory side, such, for instance, as total or partial deafness, with or without total or partial blindness. 2. Arrests of development of central sensory origin, including word-deafness, word-dumbness, voluntary whispering, agrammatismus and akataphasia (inability to form sentences syntactically correct), and various forms of stammering. The author defines the last of these as "inability of uttering or correctly forming certain sounds or sound combinations," hence there may be vowel-stammering, stammering in labial sounds, in dental, palatal sounds, L- and R-stammering, &c. 3. Arrests of development in the peripheral expressive mechanism, including lisping in its various forms, and snuffling. The second main group is concerned with disorders arising after speech is acquired, such as stuttering, which is defined as "a spastic neurosis of cöordination interfering ...... with the pronunciation of initial syllables or of words in the middle of a sentence. The articulation of every sound is correct." In the same group are disorders of speech at puberty, those associated with various nervous diseases such as chorea, epilepsy, hysteria, and tic, also those that are found in cases of imbecility, and in organic conditions such as encephalitis, infantile cerebral paralysis, facial paralysis, disease of other peripheral nerves and muscles, and so on; mainly, therefore, a symptomatological group. There is a special subsection on the varieties of mutism.

We do not know any treatise in which the manifold disorders of speech in children are so minutely described and their treatment so carefully and practically demonstrated. If the practitioner has hitherto been too often content to assure the anxious parents that the child will "grow out of its defect" a perusal of this book will teach him the urgent necessity of painstaking diagnosis and of systematic treatment. The whole subject has been too much neglected by medical men, with the result that it has become the happy hunting ground of charlatans and quacks of every description. This division of the volume can be cordially recommended to the earnest attention of the inquiring general practitioner, as well as to the neurologist and psychologist. Further, those who are concerned with pedagogy and with phonology might read the book with profit, though we agree with the author in his contention that official medicine should take the subject up from henceforward, for the treatment of disorders of speech should be scientific, not empirical.

The work is excellently printed, though on unnecessarily heavy paper. There are 20 admirable coloured plates and numerous good illustrations.

LIBRARY TABLE.

The Vicious Circles of Neurasthenia and their Treatment. By Jamieson B. Hurry, M.A., M.D. Cantab. With illustrations. London: J. and A. Churchill. 1915. Pp. 90. Price 3*s.* 6*d.* net.—The establishment of vicious circles in disease is a familiar clinical fact. Dr. Hurry takes neurasthenia, and works out the action of the vicious circle in the different systems of the body affected in that disease. He exemplifies the mode of action in the case of the vascular, respiratory, digestive, and genito-urinary systems, as well as in the psychical sphere. A large number of quotations from other authors, in practically every one of which the words "vicious circle" occur, are adduced to "guard against any possible charge of obsession in reference to the rôle of the circle." The breaking of the circle by treatment is discussed along accepted lines. If there is little that is novel in the book, it furnishes good illustrations of the widespread influence of pathological inter-relations as displayed in the particular case of neurasthenia.

The Body in Health. By M. V. O'Shea and J. H. Kellogg. Illustrated. New York: The Macmillan Company. 1915. Pp. 324. Price 3*s.* 6*d.*—This little volume represents the latest addition to the

Health Series of Physiology and Hygiene, a series of popular works intended to present in an attractive form for pupils in the elementary schools accurate information on the hygiene of daily life. The book is freely illustrated by photographs and drawings in order that important matters relating to health may be impressed upon the eye of students. At the end of each chapter a number of problems are set on the subject matter dealt with in the text. It is intended that problems shall be worked out in the class-room and discussed freely between pupils and teachers. This method of engaging the interest and teaching the practical applications of a lesson has been found to bear excellent fruit in schools in America in which the system has been adopted. As an example of the problems set we give the following from the end of Chapter VI., which deals with the heart and blood: "Can you tell when you look at a person whether or not his blood is pure? Why should blood cells be kept in good fighting condition?" Both authors have the faculty of making common-place details attractive, and of investing even dry bones with picturesqueness. The special senses are described as gateways to the mind. The excretory functions are described in a chapter entitled "How the Body Cleanses Itself." The cells are called the little workers of the body and disease germs the enemies of the body. The authors are to be congratulated on their courage in essaying to explain some of the most difficult problems in physiology and pathology to the half-developed minds of children; it would in many cases have been simpler to have shirked these questions or to have circumvented them by subterfuges and inaccuracies. We sincerely hope that this little work will find its way into the hands of teachers in our own elementary and secondary schools.

Materia Medica and Pharmacy for Medical Students, with an Appendix on Incompatibility. By REGINALD R. BENNETT, B.Sc. Lond., F.I.C., Pharmacist and Teacher of Pharmacy to University College Hospital, London. Third edition. London: H. K. Lewis. 1915. Pp. 248. Price 4*s.* 6*d.* net.—The third edition of this useful and practical little work has been completely revised and brought into conformity with the new Pharmacopœia. The pharmacological classification of the previous editions, however, has been retained, and the apothecaries' system of dosage has been included in parentheses after the metric system, which is that now used in the Pharmacopœia.

A Hausa Phrase-Book, with Medical and Scientific Vocabularies. By ALLAN C. PARSONS, M.R.C.S., L.R.C.P. Lond., D.P.H. Oxon., Sanitary Officer, Gold Coast. Oxford University Press (Humphrey Milford). 1915. Pp. 164. Price 7*s.* 6*d.* net.—This book contains a series of phrases with Hausa translation, intended for those who wish to gain a speaking acquaintance with that language. It is divided into three parts: Part I., phrases in general use, consisting of miscellaneous idioms and phrases relating to household management, travelling, stable management, and hunting; Part II., departmental phrases, political and administrative, military and police, public works, forestry and agriculture, customs, commercial, mining, nursing, and hospital management and medical terms. Part III. contains English-Hausa and Hausa-English vocabularies of medical and scientific words. From the point of view of the would-be learner the chief criticism we would make is on the absence of any anatomical dissection of the language, in consequence of which the sentences seem to call for individual memorisation, throwing the same strain upon a retentive memory that is needed for mastering Chinese ideographs. It would be a huge task for the student wishing to make practical use of the book to turn up a sentence that would serve him to express the particular idea in his mind, whether assertion or question. In a book of this description we think the more scientific plan would be to build up progressive models of expression which could be varied with an increasing vocabulary by the mere change of one or two words. Another difficulty is that no scheme of phonetics is appended to enable the reader to estimate the correct pronunciation of the Hausa words. From the point of view of the printing, also, we think that it would have been much better to use different types for the English and the Hausa. The book, doubtless, will be of service to residents in the Hausa-speaking districts of the West Coast of Africa after they have already made some acquaintance with the language.

JOURNALS.

The British Dental Journal.—In the June issue of this journal there is a paper by Mr. E. D. Davis on the Pathology and Treatment of the Maxillary Antrum. The author considers that antral suppuration is but seldom traceable to dental causes, and when due to such causes he considers that the third molar is most commonly the offending tooth. Alveolar puncture, in his opinion, is highly unsatisfactory, and even when the cause is dental in origin he thinks that extraction of the tooth followed by syringing the antrum from the nose gives better results than irrigation through the tooth socket. Mr. Wesley Barritt has an interesting paper on Synthetic Drugs and Chemicals, and Mr. Claude Colyer a letter on Army Dentistry, in which he suggests some methods of treatment based upon his experience with the Expeditionary Force.

THE METROPOLITAN WATER-SUPPLY.

THE report on the condition of the Metropolitan water-supply during the month of February, 1915, was issued last week. The results are of more than usual interest owing to the fact that in the Thames basin the rainfall during February was 4·57 inches, which is 2·66 inches above the average mean rainfall for that month during the previous 32 years. The statement shows that the Thames water was in good condition from the 1st to the 3rd and from the 24th to the end of the month; on the remaining days, however, it was more or less coloured and turbid while the increased water was flowing. The samples of water collected at the different works were clear, bright, and free from suspended matter, showing that the storage and filtration systems adequately deal with the increased suspended matter and colouring in the raw water caused by a higher rainfall. In Dr. A. C. Houston's official report on the chemical and bacteriological examination of the water-supply there is an abundance of detail, and the numerous tables show what an enormous amount of laboratory work is done in this direction. Owing, however, to the heavy cost of publication the figures given in the report must be regarded, Dr. Houston states, as summaries and averages only of complete details. In regard to chemical examination, the *raw* Thames waters deteriorated and the Lee water also, except as regards albuminoid nitrogen, while the *raw* New River water improved. The three *raw* waters compared with the averages of

1914 yielded results worse than their respective averages as judged by the albuminoid nitrogen, permanganate, turbidity, and colour tests, while all the *filtered* waters yielded also worse results. In the bacteriological examination all three *raw* waters contained more bacteria than their respective averages in the previous year. The *filtered* waters, generally speaking, yielded not unsatisfactory results. It is shown that in February, 1915, whereas 100·0, 90·0, and 80·0 per cent. of the samples of *raw* Thames, Lee, and New River water respectively contained typical B. coli in 1 cubic centimetre (or less), 62·7, 80·0, and 59·4 per cent. of the *filtered* samples derived from these rivers contained no typical B. coli even in 100 times as much water—namely, 100 cubic centimetres. Even, therefore, under conditions of pressure when a greater demand is made upon the capacity of the purifying installations the water reaches the consumer in a bacteriologically safe condition. This speaks eloquently of the high efficiency of the methods of purification adopted, storage and filtration, and the scientific investigations made on these questions by Dr. Houston in the past may well entitle him to be proud of the satisfactory practical results to which that work has led.

Reports and Analytical Records

FROM

THE LANCET LABORATORY.

OXYDOL.

(NEW OXYDOL PRODUCTS, LIMITED, 23, FITZROY-SQUARE, LONDON, W.)

WE have examined two samples of peculiarly pure hydrogen peroxide sold under the name of oxydol. Both samples were bright, colourless, and non-acid. We made a careful search for the common impurities of hydrogen peroxide such as baryta and sulphuric acid and chlorine, but with negative results. One sample contained peroxide of hydrogen equal to three volumes of available oxygen and the other six volumes of oxygen. For medicinal purposes, of course, peroxide of hydrogen should show a high degree of purity. Oxydol is well adapted for antiseptic treatment, and it is necessary, particularly in the treatment of wounds, that no acid should be present, as this may cause irritation.

ENERGEN BREAD.

(THE THERAPEUTIC FOODS COMPANY, BEDFORD CHAMBERS, COVENT GARDEN, LONDON, W.C.)

Energen bread according to our analysis resembles the composition of ordinary bread with the important exception that a proportion of the starch has been eliminated and an addition of some fat has been made. It may be described, therefore, as a partial gluten bread, and its texture suggests this. According to our analysis the bread has the following composition: moisture, 7·20 per cent.; mineral matter, 0·60 per cent.; protein, 32·19 per cent.; carbohydrate, 52·60 per cent.; fat, 5·44 per cent.; and fibre, 1·97 per cent. The bread is palatable and provides a suitable food in those cases in which some tolerance for carbohydrates is exhibited. There seems little doubt that the diabetic patient in some instances may take a regulated quantity of carbohydrate, but, of course, the allowance must be watched. Energen bread is useful for this purpose.

PIPERAZINE CITRATE.

(ALFRED BISHOP, LIMITED, 48, SPELMAN-STREET, LONDON, N.E.)

The introduction of piperazine in the form of citrate enables this base to be given in the shape of a non-hygroscopic and non-volatile salt. The preparation before us is well made and occurs in fine white granules. It is readily soluble in water, the solution having a saline and slightly bitter taste. It appears to be well established that piperazine or its salts do afford relief in gouty conditions. It has also been employed in neuritis and sciatica. Its mode of action does not appear to be quite clear, but it is generally stated to have a soluble action upon uric acid, piperazine urate being a much more soluble and diffusible salt than the ordinary alkaline urates. The citrate appears to be a very good form for exhibition in these cases.

TRI-MUR-TI.

(THE TRI-MUR-TI COMPANY, 11, HILLS-PLACE, OXFORD-STREET, LONDON, W.)

This is an opalescent, pearly-looking jelly containing a large proportion of pure solidified petroleum associated with oil of peppermint. It is primarily intended as a laxative, but, of course, the oil of peppermint contributes therapeutic properties, serving, as is well known, as an anti-spasmodic or carminative. By those who like the taste of peppermint, as children do, the preparation is well taken. On the whole it seems to be a useful combination, and it is well prepared, showing a perfectly uniform consistence. According to our analysis it contains 94 per cent. by weight of petroleum. This, of course, gives a higher figure by volume according to the density of the hydrocarbon oil used.

LYSOL ANTISEPTIC TOILET SOAP.

(MESSRS. CHAS. ZIMMERMANN AND CO. (CHEMICALS), LIMITED, 9 AND 10, ST. MARY-AT-HILL, LONDON, E.C.)

This is an agreeable toilet soap reinforced with 5 per cent. of the well-known antiseptic and detergent lysol. On decomposing the soap with acid and distilling, about 2½ per cent. of cresols was obtained. It very freely lathers, yielding a bulky foam, and leaving a marked sense of cleanliness. It shows an alkaline reaction to phenolphthalein, the presence of the alkaline lysol adding materially to the detergent properties of the soap. It is agreeably scented, and there is little evidence of the presence of lysol to the smell.

TWO AGREEABLE COCOAS.

(MESSRS. CADBURY BROS., BOURNVILLE, BIRMINGHAM.)

Cocoa is fulfilling an important rôle just now, inasmuch as its nutrient and mildly stimulating qualities are much appreciated by our soldiers, both those actively serving and the wounded. We have received from the above firm two samples of cocoa which upon making an analysis show certain differences in composition. Bournville cocoa (flavoured) gave the following results: moisture, 4·87 per cent.; mineral matter, 8·60 per cent.; fat, 26·55 per cent.; alkalinity of ash in terms of potash, 3·94 per cent. The unflavoured essence gave the following results: moisture, 3·30 per cent.; mineral matter, 5·05 per cent.; fat, 25·62 per cent.; alkalinity of ash in terms of potash, 0·70 per cent. Both are high-grade, attractively flavoured cocoas, the Bournville showing an increased "solubility" over the unflavoured specimen, due to the presence of a larger percentage of salts, as revealed in the analysis.

THE LANCET.

LONDON: SATURDAY, JUNE 26, 1915.

Midwives and Moral Character.

A RECENT decision of the High Court with reference to a midwife who had been struck off the official register by the Central Midwives Board was calculated to give the impression that the decision of the Board had been reversed upon appeal as to an important question of principle. This, however, we believe, is not the case. The matter was brought before the Central Midwives Board at a recent meeting, when a letter was considered which had been addressed to the Board by the honorary secretary of the Midwives' Institute. This letter referred to the fact that the charge upon which the Board had ordered the midwife's name to be removed from the Roll was one of immorality, and acknowledged that the reversal of the Board's decision was on account of a technical omission in connexion with the proceedings taken. It went on, however, to point out that the result of the case was likely to lay the decision of the judges open to very serious misconstruction in the mind of the general public. The secretary of the Midwives' Institute had therefore been instructed to forward to the Board a resolution passed by the Institute that "The Midwives' Institute respectfully asks the Central Midwives Board to make a pronouncement, which can be reported in the press, that in spite of the High Court's reversal of the Central Midwives Board's decision in a recent case, the Board will, as it has heretofore done, continue to support the moral as well as the professional status of practising midwives." The reply to this, which the Board resolved to make at the meeting referred to, is decisive and eminently satisfactory. It refers to the judgment of the court as having reversed the Board's decision with regard to the midwife in question, but describes it as having confirmed the Board in its position as the authority determining what is or is not misconduct in a midwife, and as having decided that misconduct is not to be limited to misconduct in a professional sense. The Board, further defining the principles upon which it is prepared to act in such matters, stated its opinion that conduct which before enrolment would render it impossible to certify that a candidate was of "good moral character" renders her, after enrolment, liable to be removed from the Roll for "misconduct"; and the Board declared that there was no likelihood that it would depart from this position.

The declaration thus made is, as we have said, eminently satisfactory. To have found that the Board had been compelled by legal decision to abandon all consideration of the moral character of a midwife after once admitting her to practice among the women who might seek her aid, would have been more than disconcerting. It would have been disastrous, and we can well understand the desire of the Midwives' Institute to obtain a pronouncement which, through the medium of the press, should do much to correct the wrong impression likely to be conveyed by the report of the appeal referred to. The practice of a midwife, implying attendance upon women and to treating them in, and in connexion with, pregnancy and childbirth, brings her in contact with females of the humbler classes of society, with married women of the strictest respectability, and with those in very different circumstances. It is difficult to imagine any person whose opportunity for mischief among her sex would be greater if she herself were to be of loose morals and at the same time endowed with the training and skill which the Midwives Act, 1902, was passed to promote. The Act itself clearly states the intention of those who framed it, for in Section 2, where it provided for the immediate admission to the roll of persons having certain stated professional qualifications, it declared that the possession of these must be supplemented by the possession of a "good character." It is in accordance with the intention thus expressed that in the regulations under which midwives are now admitted a good moral character is stipulated for, and it would be altogether illogical and absurd if the power to remove from the Roll on account of proved immorality were withheld. It is not, however, only the desirability of a right to remove undesirable persons from the official roll which we are now discussing. We are rather insisting upon the performance of the duty to remove such persons, both for the sake of the pregnant women who may come under the midwives' care, and for the credit of the women who have made midwifery their profession.

The Midwives Act sought to confer a benefit upon women at large by providing for them a body of trained and enrolled members of their own sex to attend them in labour. Incidentally, it deprived many members of the medical profession of a not unimportant percentage of their usual emoluments, while leaving them in the doubtful and unsatisfactory position of consultants to whom resort is to be had compulsorily in emergencies. It did more, however, than to provide for the training of midwives, and to hand over to them a share in a particular branch of medical practice. It conferred upon them a privilege, denied to medical men, of practising without any competition from the unqualified of their sex. Any man, however ignorant, however dishonest or immoral, may impose upon the ignorant by pretending to treat disease, so long as he does not pretend that he has medical qualifications. He may make a profit, indeed, by boasting that he does not possess them. But for the past five years women not certified under the Act have not been permitted to practise as midwives, even if they do not pretend to be registered as such. Midwives, therefore, now are members of a specially protected body. It is, however, of high importance that those enjoying unique and exclusive rights should be beyond question worthy to enjoy them. And in the case of midwives the privilege must be thoroughly deserved by the possession of an unblemished character. This is necessary for the sake of the patients treated and for the protection of the public. It is also, as is shown by the recent action of the Midwives' Institute referred to above, entirely in accord with the wishes of the midwives themselves. There is good cause for satisfaction in the fact that this representative body should have shown itself jealous for the honour of those for whom it is qualified to speak, and by its prompt action should have strengthened the hands of the Central Midwives Board in the fulfilment of its disciplinary functions.

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The New Salvarsan Products.

A COMMUNICATION was made on behalf of the Medical Research Committee to THE LANCET of April 10th with regard to the control which the committee, at the request of the Board of Trade, is exercising in the present national emergency over the French and British preparations of salvarsan which are issued for sale in this country. It was then announced that the committee were satisfied that the products tested biologically under their direction were not inferior in safety or in efficacy to the original German preparations. From a further communication, which we publish in this issue, it will be learned that both laboratory and clinical trials had proved satisfactory in the hands of the Medical Research Committee before the issue of the new salvarsan products was authorised, and as these have been now for some months at the disposal of the medical profession in this country, it seems to us quite timely that the committee should seek to collect from those who have had experience of their use a detailed record of their practical application.

We have nothing to add to the arguments set out by the Medical Research Committee to show that the making of accurate reports of all cases under treatment with the new salvarsan products will be of the greatest value, both now and hereafter. The results of the administration of salvarsan can at present be only imperfectly explained, and the only possible way to arrive at more perfect clinical treatment is by keeping careful notes of all cases, so that by collating those notes from time to time we may arrive at common lessons pointing the way to improvement. The communication which we publish this week says that, to appraise the significance of clinical experience after the employment of a particular batch of any given preparation, it is of great importance to have as complete a record as possible of the other cases which have been treated with the batch in question, for records of this kind, when referred to the scientific workers engaged on behalf of the Medical Research Committee in the biological testing of the products, would allow a study of the closeness of the correlation which may exist between the results of clinical observers on the one hand, and laboratory experts on the other. With such help it would become clearer whether the system of controls which has hitherto been applied, and which has followed the lines laid down by the experience of EHRLICH and his co-workers, requires any modification.

We join heartily in the request of the Medical Research Committee that records of this kind may be sent to the secretary of the committee, St. Stephen's House, Westminster. In the treatment of any disease by a series of preparations it is obvious that three possible sources of error and confusion must exist. The preparation, however carefully standardised, may not have constant virtues; the technique of administration will vary in its perfection; the patient has his fluctuating physiological properties and his idiosyncrasies. These sources of error and confusion can be restricted steadily, and can even be reduced to a point where they become negligible, but only by a steady comparison of carefully recorded results, and the more results that are available, and the greater the precaution that is taken to render them trustworthy, the sooner is the element of empiricism removed from practice.

Annotations.

"Ne quid nimis."

THE PLAGUE MENACE IN THE UNITED STATES.

WE have on several occasions drawn attention in these columns to the threatened danger of an invasion of the United States by plague. At the present moment the matter appears to be giving rise to some anxiety even in American official circles, and Dr. W. C. Rucker, Assistant-Surgeon-General of the United States Public Health Service, has lately set out certain facts and considerations bearing upon the subject in an article published in our American contemporary, *Public Health Reports.* Dr. Rucker points out that plague spreads more frequently from one country to another by water than by land, and that this diffusion is due to rats which travel on board ship from infected to healthy ports. At the present moment plague is widely spread over almost the whole of the known world, and as the United States are in frequent communication with foreign countries by shipping the arrival of infected rats is both possible and probable. Plague is at present occurring in the island of Cuba, and danger is also apprehended from infected ports in Brazil as well as from others in Peru and Ecuador. There is also frequent communication with the infected ports of India and the Far East as well as with those in North Africa and the Near East. No human cases so far as is known have occurred during the present year in the United States, but infected rats are still being found from time to time in the port of New Orleans and in a less degree at the Pacific port of Seattle. It has even been suggested that if careful search were made at other ports more infected rodents would probably be discovered. Dr. Rucker does not include in his enumeration of the sources of the plague danger the focus of enzoötic plague existing among the ground squirrels which infest the State of California, although up to quite recently infected animals have been caught in that region. There is risk that around the towns at least rats may become infected by entering the burrows of the ground squirrels and convey the infection into human dwellings. In discussing the action to be taken for resisting the invasion of the United States by plague, Dr. Rucker classes the measures under four headings—namely, enforcement of maritime quarantine, the prevention of the embarkation and disembarkation of rats at ports, the immunisation of the human population by inoculation with Haffkine's prophylactic, and lastly the rendering rat-proof of all dwellings and workplaces. As to maritime quarantine alone it cannot, he says, prevent the diffusion of the disease, and if carried out it must be done at the expense of commerce. The prevention of access of rats to ships, however valuable in itself, cannot be absolutely relied upon to keep away the disease altogether. As regards general protection of the human population by prophylactic inoculation, experience has shown that it is impossible to secure this to any great extent except where virulent and fatal epidemics have already caused ravages among the people and created panic. There remains, therefore, in Dr. Rucker's opinion, only the carrying out of general rat-proofing of all dwellings and places of business, a measure on which he believes implicit confidence can be placed to prevent any serious consequences even if infected rats should secure a landing and infect the local rat population. Lastly, Dr. Rucker expresses the opinion that persons who live or work in rat-proof buildings need have no fear of plague.

CHILDBIRTH AMONG CENTRAL AFRICAN TRIBES.

IT has been said that among savage tribes the act of parturition is less painful than among civilised people, and even that it is painless and free from danger, so that any assistance or medical aid is unnecessary. Dr. Carlo Pulieri, who for eight years practised in the Belgian Congo, has written an interesting letter on this point to *La Clinica Ostetrica* (May 30th), in which he declares that black women suffer as much as white and like them are subject to all the embarrassments of their condition, and that if they had the will and means to avail themselves of skilled assistance the mortality both of mothers and children would be sensibly diminished. Besides the fact that they have no faith in medical aid, the inveterate prejudices and beliefs of the natives prevent them having recourse to it. Among certain tribes, for example, childbirth is surrounded by the greatest mystery, nor may the husband be present, while the parturient woman, when the pains begin, betakes herself to some secluded corner in the forest with one of her friends and gives birth to her offspring there, seated on the ground with her back against a tree or leaning against her friend's breast. The placenta being expelled, the cord is cut with any knife that is to hand, the placenta buried, and the woman having been cleaned up with leaves, walks back to her hut with her baby in her arms. At other times labour takes place in the hut itself, but always on the ground in the position above described. The friend gets ready boiling water and performs any little services that previous experience suggests to her; bleeding is restrained by bathing with hot water and on the cut end of the cord some earth is placed or the powder of a particular kind of red wood mixed with palm oil. The same composition is also smeared on the large fontanelle, probably as a protection. All this, however, does not take place without groans, weeping, and gestures of despair, which afford very clear indications of the suffering the woman is undergoing. This description applies to a normal labour, but it is far otherwise if everything is not straightforward. A shoulder presentation, for example, would mean certain death for both mother and child. In less difficult cases, or where there are serious complications, the attentions of the friend are unfortunately exercised in such a manner as to attempt useless and dangerous manual efforts to deliver so that the woman's life is in serious peril. On one occasion a woman was brought to Dr. Pulieri at the hospital, who had been left for three days with the fœtal head out of the vagina, none of those present being able to extract the child. Manual delivery of the placenta is never practised, and no one troubles to ascertain whether expulsion is complete, the woman being often left for days with the afterbirth in the vagina or hanging half out. Shortly before he left an American missionary sent him a woman who had been suffering for four days. She had a temperature of 39·6° C., thready pulse, œdematous and bleeding genitals, enormously distended bladder, and the fœtal head fixed in the pelvis. Dr. Pulieri pushed up the head, emptied the bladder, and extracted the dead child, but the woman died a few hours afterwards. No one present at the labour knew anything about retention of urine, or would have possessed any means of preventing or relieving it. It is indisputable, says the writer, that labour among savage tribes is more easy than with us; conditions of climate, life, habits, and age eliminate many complications. Deformed pelves are very rare, the women are very young, and infection is not common among them. But these women suffer during labour, and although sepsis is rare there are cases in which it is severe and certainly due to lack of proper assistance.

THE TREATMENT OF ACUTE LOBAR PNEUMONIA.

IN a recent number of the *Polyclinic* Mr. A. J. Mathison describes what he considers an almost certain specific for the treatment of acute lobar pneumonia. Its use may be confidently expected to result in recovery, he says, unless the patient has already been ill several days. Of his own 65 patients all but one recovered; 13 had normal temperatures within a few hours. The treatment consists in giving the following mixture regularly from the moment of diagnosis until the temperature becomes normal :—

℞	Potassii iodidi	ʒi.
	Creasoti	ʒss.
	Spir. rectif.	ʒii.
	Ext. glycyrrh. liq.	ʒiii.
	Aquam ad	℥vi.

M. A tablespoonful to be taken every four hours.

The treatment produces an abortive type of pneumonia in most cases. Local applications to relieve pleuritic pain may be added; good nursing, though a welcome aid, is not essential; no powerful therapeutic measure, such as cold bathing, should be used with the treatment, which is as specific for pneumonia as quinine is for malaria. The diagnosis of Mr. Mathison's cases seems to have been made on the symptoms and physical signs they presented, without the aid of bacteriology. The simplicity of the treatment he recommends is no less striking than the success with which it would seem to have met in his hands and in the hands of other medical practitioners he names; a modern Tertullian might even be tempted to say of it, *Credo quia absurdum.*

AN EDUCATIONAL LUNCH-ROOM.

A VERY interesting experiment which at the present time might well be tried in this country has recently been started by the Department of Health in New York. An educational lunch-room has been opened for the use of the employees of the department, the object of which is primarily to provide a wholesome luncheon at cost price, and secondarily to educate the patrons in the subject of food and nutrition. From a copy of a specimen menu which we have received some idea is obtained of the luncheon served and of the methods followed to educate the customers in all questions relating to food values. This programme is divided into five columns. First is given the name of the dish, then the price, then the quantity, next the calorific value, and finally the protein content. A few examples are as follows: 4 oz. of lean beef are provided, costing 20 cents, the calorific value of which is 140 and the protein value 30; an average helping of potatoes, costing 5 cents, gives 150 calories and 4 grammes of protein; 3 oz. of ham, costing 15 cents, give 260 calories and 20 grammes of protein, and so on. These specimen meals show at once the foods which do or do not supply a sufficiency of calories or proteins, and the most economical way therefore in which each can be obtained. The experiment will be watched with interest, and though progress may possibly be slow yet the subject is more likely to be appreciated by this objective teaching of the lunch-room with its scientific menu or "food wisdom" notes than in any other way.

GASTRIC HEADACHE.

THE condition popularly known as "sick headache" or "bilious headache" has received little attention. Probably because the attacks are transient and do not endanger life or injure health it is regarded as one of those minor ailments scarcely worthy of the investigator. Yet it is a very common affection, and, as those who suffer from it well know, a most distressing and at times disabling one. In the *American Journal of the Medical Sciences* for May Dr. W. F. Cheney has brought forward evidence that at least one form of headache, probably known as "sick headache," is due to gastric disorder. This affection he terms "gastric headache." The symptoms are well characterised. The headaches are usually periodic, and may occur but once in a month or a week. They usually come on while the patient is in good health and are of variable duration, but rarely last more than 24 hours. He may awaken with the pain in the morning, which grows worse as the day goes on, or it may come on in the evening, persist during the night, and wear off after he rises. The pain may take the form of hemicrania or involve the whole head. Sometimes nausea and vomiting accompany the pain, giving rise to the term "sick headache," but in other cases no gastric disturbance is even suspected. On the other hand, there may be evidence of gastric disorder, such as belching or water-brash, or a sense of distension after meals, an abnormal appetite, or a persistent sour taste in the mouth. In a third group habitual indigestion of the hyperchlorhydria, atony, or chronic gastritis type is complained of. At the times of the headache the gastric symptoms are intensified. Dr. Cheney has investigated the gastric functions by means of test meals and found that the most frequent disturbance is loss of gastric motility. Gastric secretion may or may not be normal, but the important fact is delay of food in the stomach. If patients with this abnormality indulge in an unusually heavy meal or eat when tired or exhausted by mental or physical exertion headache is likely to result. The following is an example. A well-nourished man, aged 40 years, had suffered from headaches for seven or eight years. At first they occurred about once a week, but recently as often as every second or third day. Nausea usually accompanied headache, but rarely vomiting. The appetite was poor and much gas was belched after eating. Physical examination was negative, but after the Ewald test meal the total amount of stomach contents obtained was large, 176 c.c., and even after its removal a loud splash could be elicited. The total acidity was 72, with free HCl 36 and combined HCl 20. On inflation the greater curvature was found 4 cm. below the navel, but there was no peristaltic wave. The diagnosis was atony with hyperchlorhydria. A soft non-irritating diet with restriction of acid and highly seasoned foods was advised, and nux vomica was given after meals. As the patient spent long hours in an office he was urged to take more exercise out of doors. The headaches practically disappeared and recurred only at long intervals after an indiscretion in diet or work. Dr. Cheney does not suggest how the loss of gastric motility produces headache. The explanation seems to be that it leads to the formation of some toxins which are absorbed into the system. The foul tongue and breath—which may be observed in these cases and which he does not mention—point to this. He says that constipation is frequently present, but the condition is commonly observed in a most severe form without any constipation. However, a purgative, especially one which is an intestinal disinfectant, such as calomel, seems to shorten the attacks. Dr. Cheney has shown that these headaches are often due to gastric disorder, but we would suggest that the toxæmia on which they depend may also be due to some intestinal disturbance, or even to hepatic trouble—to revert to the old view.

THE NODAL OR A.-V. RHYTHM.

BY nodal rhythm there is meant synchronous or almost synchronous contractions of the auricles and ventricles. Instead of the latter succeeding the auricular systole at an interval of 0·12 to 0·16 second the two chambers contract together, due to the excitatory impulse reaching both chambers at the same time. This impulse originates at the A.-V. node, situated at the upper end of the bundle of His and equidistant, functionally, from each chamber. Such a dislocation of the "pacemaker" of the heart from its normal site the sinus, to this secondary and less rhythmic centre was thought at one time to be distinctly rare. But this opinion is now less strongly held since graphic methods of examination allow of its recognition. It gives rise to no symptoms, it does not influence rate, and for these reasons no doubt is less often recognised than would otherwise be the case. There are two conditions which may induce it. One is where the sinal rhythm is so slowed that this less rhythmic secondary centre is allowed the opportunity of initiating its otherwise dormant rhythm. The other is where the nodal rhythmic activity is enhanced in proportion to that of the sinus. Instances of both these kinds are known. In a recent issue of *Heart* Dr. E. E. Laslett reports one where the nodal rhythm is provoked through sinal slowing. Its rate was 53 to 59 per minute. Examples of heightened nodal rhythm replacing the sinus have been recorded by Cowan, and in several of his cases microscopical examination showed definite inflammatory changes involving the nodal tissue. Another case has been reported (Lea) where similar increased nodal activity occurred. In this case, however, its rhythmic rate so closely approximated to that of the sinus that the slight changes of sinal rate due to respiration, a quickening in inspiration and slowing in expiration, resulted in alternate phases of sinal and nodal rhythm, sinal (normal) rhythm occurring during inspiration, nodal rhythm during expiration. The nodal rhythm may not be without practical interest, in spite of its offering no subjective symptoms, since it has also been shown that phases of this character may occur at certain stages of chloroform anæsthesia. These latter observations have, at the moment, been confined to animals only, but their significance remains to be estimated clinically.

THE ETIOLOGICAL FACTOR IN CEREBRO-SPINAL FEVER.

IN another column we publish an article by Dr. R. Donaldson under the title of "A Contribution to the Study of the Etiological Factor in So-called Cerebro-spinal Fever." He makes various observations in regard to the bacteriology of cerebro-spinal fever which are not in accordance with the views generally held, but which are certainly suggestive, and if corroborated by other observers would necessitate considerable modifications of the opinions hitherto set forth as to the etiology and nature of the disease. Dr. Donaldson's observations were made during the outbreak of cerebro-spinal fever in Reading, and he examined the cerebro-spinal fluid in about 60 cases, so that his experience is considerable. At the outbreak of the disease he believed, like many others, that the meningococcus of Weichselbaum was responsible for the disease, but he now enunciates a new theory. He relates two cases, one of pyæmia with a history of preceding gastro-intestinal disturbance followed by a prolonged illness, and a second, which, while showing symptoms of meningococcal infection, might have been attributed to middle-ear disease followed by an abscess in the brain. From each of these cases similar organisms were isolated. Dr. Donaldson then proceeds to state that in all the fluids and purulent exudates from cases of cerebro-spinal meningitis which he examined he observed one common factor—namely, the presence of diphtheroid rods, together with Gram-positive and Gram-negative diplococci; all the various types of form were reproduced in cultures from the two cases to which we have just referred, and he therefore concludes that they were due to the same infective agent as was responsible for the epidemic that occurred in Reading. After a full description of the cultural characters of the organisms, their morphology and staining reactions, and the results obtained by inoculations in animals, the conclusion is arrived at that the causal organism of the epidemic dealt with was a diphtheroid rod closely related to the Klebs-Löffler bacillus. This rod appeared as a pleomorphous organism, which might give rise to Hoffmann-like forms, to what appear to be meningococci, &c. He maintains that this organism is very widely spread in nature in one of its most resistant forms, and "it is this form and not the meningococcal one which is transmitted from one to another." Dr. Donaldson's propositions deserve careful study, but we consider that further observations are necessary and hope that other bacteriologists may be stimulated, as opportunity arises, to investigate along these lines. The suggestion that the struggle of a new disease to win a place among epidemics is being witnessed requires further evidence before it can be accepted, but Dr. Donaldson has certainly given sufficient cause for attention and investigation.

ALKAPTONURIA, WASSERMANN'S REACTION, AND OSTITIS DEFORMANS ALKAPTONURICA.

IN a lengthy article of 130 pages illustrated with 19 reproductions of skiagrams and numerous curves and figures, Dr. G. Söderbergh[1] gives a new clinical account of the four cases of alkaptonuria hitherto described in Sweden, drawing particular attention to the fact that alkaptonuria without a previous syphilitic infection may give rise to a positive Wassermann reaction, and to a chronic deforming arthritis in many ways comparable to Paget's disease of the bones and joints. As is well known, alkaptonuria is characterised by the occurrence of homogentisinic acid (1–3–5–C_6H_3 (OH_2) CH_2COOH), otherwise known as dioxyphenylacetic acid, in the urine. This acid is partly endogenous in origin, or derived from the tissues, and partly exogenous, or derived from the proteins of the food. It is known to have two mother-substances or precursors—namely, tyrosin (1–4–$C_6H_4OHCH_2CHNH_2COOH$) and phenylalanin ($C_6H_5CH_2CHNH_2COOH$); if an alkaptonuric person is fed with lævo-rotatory phenylalanin, about 90 per cent. of the substance is excreted in the urine as homogentisinic acid. The disorder is known to be very chronic, mainly affecting males, and to be familial in incidence. Time was when alkaptonuria was regarded as a harmless type of abnormal metabolism, a metabolic "sport," as breeders might say. Söderbergh, however, lays stress on the troublesome and pathological associations it may have with the very rare disease ochronosis which often complicates its later stages, with the chronic arthritis to which Allard and Gross drew attention in 1909, with the cardio-vascular disease emphasised by Kolaczek in 1910, and with the occurrence of a positive Wassermann reaction in the blood. He gives a full account of the four Swedish cases of alkaptonuria with ochronosis, one of them a new case of his own. This patient, a peasant aged 42, exhibited a round kyphosis and rigidity of the whole dorsal and upper lumbar spinal column, thickening of the spine of the right scapula with waviness of its inferior margin, rounding of the lower margin, and increased thickness of the bone generally; the iliac crests were thickened also. Examined with the X rays, his bones generally and the basis cranii in particular showed increased translucency; the edges of the lumbar vertebræ were pressed outwards and thickened. Ochronosis and a strongly positive Wassermann reaction were found to be present. Söderbergh gives 48 pages to the relation between alkaptonuria and Wassermann's reaction, with experiments to illustrate the connexion between the two. His own patient gave a negative reaction after a month's treatment with mercury and iodide; then 15 grammes of racemic tyrosin were administered in six hours, and within 23 hours the patient once more gave a positive Wassermann reaction. The second patient gave a similar result when fed with tyrosin; the fourth patient gave a weakly positive reaction; while in the case of the third patient the tyrosin was by accident not exhibited at the right hours, and the negative reaction remained unaltered by its administration. None of the four patients gave any sign or history of syphilitic infection apart from the evidence furnished by Wassermann's reaction. The effect of 15 grammes of lævorotatory tyrosin on the reaction of two syphilitics and one healthy person was negative. Söderbergh quotes a series of laboratory experiments proving that increasing quantities of homogentisinic acid inhibit hæmolysis in hæmolytic systems either with or without antigen; increasing amounts of the acid may produce a kind of deviation of the complement, and may convert a weakly positive into a strongly positive serum and a negative serum into a positive. In relatively small amounts the acid may sometimes appear to promote hæmolysis; further light on this point is required. Phenylalanin gave results similar to those obtained with homogentisinic acid, but even more irregular. Attention is drawn to the fact that the production of the acid in the body, or at any rate its excretion in the urine, is very irregular at different hours of the day and on different days, whether the patient is starving or on a constant diet. These variations Söderbergh attributes to variations in the endogenous production of the acid; the acid is produced in the tissues and not in the intestine, and it is argued that other substances (such as phenylalanin and perhaps benzoquinone acetic acid) may also influence the Wassermann reaction in these patients. Söderbergh sums the matter up by saying that the amino-acid diathesis, of which alkaptonuria is one manifestation, may by itself produce a positive Wassermann reaction. He argues that very possibly the alkaptonuric lacks a ferment in his tissues to break down the homogentisinic acid, which is, after all, a normal product of metabolism. He connects Wassermann's reaction with the quantity and quality of the amino-acids present in the blood, and claims priority in this conception, which has since been elaborated (latterly without mention of his name) by Much, of Hamburg. Söderbergh quotes experiments to show that the administration of potassium iodide may lessen the excretion of homogentisinic acid by an alkaptonuric patient, the quantity falling from an average of 8·5 to an average of 5·5 grammes per diem. This may explain the conversion of a positive into a negative Wassermann reaction by iodide and mercury noted above. Discussing the symptomatology of ostitis deformans alkaptonurica, he gives very full details of the pathological changes in the bones and joints of the four patients he has examined; he finds comparatively little about the disease in the literature of alkaptonuria. All four exhibited kyphosis and stiffness of the spinal column resembling spondylitis deformans, with circumscribed or diffuse osteophytic thickenings of the pelvic girdle and scapula; the bones generally showed poverty in calcium salts, the results of the deformities rather than of the disease. The intervertebral discs were thinned and partially or even completely calcified. Söderbergh is unable to fit these bony changes into any of the recognised diseases of the bones. The prognosis *quoad vitam* is good, but bad *quoad valetudinem*; treatment by potassium iodide, possibly with mercury, is certainly to be recommended. He thinks that Paget's disease of the bones may prove on closer examination to be, like ostitis deformans alkaptonurica, primarily a disease of the intermediary metabolism.

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[1] Zur Klinik der Alkaptonurie, Nordiskt med. Arkiv, Stockholm, 1915, Inre Medicin, xlviii., Hft. 4, No. 19.

THE SUPERSTITION OF FLAT-FOOT.

THE current view that most cases of static disability in the feet are due to giving way of the arch of the foot has been traversed by Dr. R. W. Lovett in a recent issue of the *Journal of the American Medical Association*. For the term flat-foot, he would substitute "foot strain." He, of course, admits that flat-foot exists, but would restrict the term to cases in which the ground is touched where the arch should be. Such feet may be rigid and resist correction, or when weight is not borne the arch may return to a certain extent. But flat-feet are not necessarily painful, and often are very serviceable—a point of some importance just now in the examination of recruits. In a research extending over several years Dr. Lovett examined the condition of 800 nurses' feet on entrance to a large general hospital, and again recorded the condition of those who developed any static disturbance during the three years' training. The nurses worked in day and night shifts in badly ventilated wards, and foot trouble was very frequent. Five or six with perfectly flat feet had no trouble whatever during the three years. On the other hand, one of the first cases that impressed Dr. Lovett occurred in a vigorous young woman with a foot so good that it was photographed as a type. She had so much discomfort from three months' work that she was incapacitated for two months, and finally had to leave on account of her feet. Yet there was no change in the shape of the foot or in its imprint, nor in any of the 800 nurses was a single case of change in the arch of the foot found. In every case the nurse stood for examination on a slab of plate glass with a mirror placed underneath at an angle so as to reflect the weight-bearing areas which appeared as greenish-white patches. These areas were sketched in the record and the amount of pronation noted. In some of the cases when painful symptoms arose the weight-bearing area had shifted slightly inward at the second examination—that is, the foot had rolled over a little over on its inner side without change in the arch, but in many cases there was not even this change. It follows that the static troubles which would ordinarily be described as flat-foot, "pronated foot," "weak foot," &c., are not due to any particular type of foot. Moreover, the pronated foot and the foot with a low arch proved slightly more enduring than the foot with a high arch. The inevitable conclusion, which has been borne out by Dr. Lovett's private experience, is that the pain and disability are due to muscular strain. He suggests that probably the ligaments become irritated by the failure of the fatigued muscles to support them, and that some degree of synovitis may arise in the tarsal joints. The foot trouble often followed an acute illness. Dr. Lovett regards the wearing of boots, which always to some extent deform the foot, as the predisposing cause. They practically always compress the forefoot and narrow the basis of support. But he considers the chief evil the curve of the sole of the boot which is made as if all feet had a rather low arch. Consequently a fair proportion of the community wear boots which impede the muscular action of the feet and do not compensate for this by supporting the arch of the foot, which is higher than that of the boot. In most cases this does no harm, because the individual is vigorous enough to overcome the disadvantage. From these views the treatment follows. The sole of the boot should have the curve which will support the arch of the foot. In the slighter cases where an obviously bad boot has been worn, it may be possible to get a boot with the requisite arch. More often the arch must be raised higher than this, which is readily done by splitting the leather forming the shank, removing the small piece of iron or stiffening which exists in most boots, and replacing it by a piece of steel with a higher and longer curve. If the foot is too pronated when the patient stands, especially if there are symptoms of strain at the inner side, the inner side of the heel may be made ¼ inch thicker than the outer, thus changing the bearing of the foot towards its outer border.

PROLONGED ANÆSTHESIA.

THE question asked by a correspondent, "Which is the longest period over which an anæsthetic has been known to be given for one operation?" has perhaps not much more than an academic interest. The practical form in which the question of length of possible anæsthesia arises is, "For how long can this particular patient be safely anæsthetised?" This is a problem which is frequently met, and the correct answer may be more confidently expected from an expert anæsthetist than from the physician or surgeon from whom it is generally demanded. It frequently happens that if an anæsthetist is confronted with a case of serious illness requiring operation, and is asked whether an anæsthetic can safely be administered, he has to give a qualified reply, such as "Yes, if the operation will not last more than such and such a time." In cases where the patient's general condition is normal the question of length of time rarely arises as a serious point, for most surgeons nowadays are fully alive to the importance of curtailing the operation period so far as is possible and compatible with care in operating. It is rarely, indeed, that any procedure requires four hours or more for its completion as in the case described by our correspondent. In ordinary work even long abdominal cases rarely exceed three hours, and one anæsthetist of wide experience has never had to administer for longer than three and a half hours for one operation in the whole of his career. The length of time that a patient could actually be kept anæsthetised and still recover would vary, of course, according to the nature of the operation, for it is the combination of operative shock and the effects of the anæsthetic that would be responsible if recovery did not ensue. And here the nature of the anæsthetic comes into the question. The modern methods of combined alkaloids, local analgesics, and general anæsthetics enormously extend the possible duration of safe anæsthesia. Many patients operated on by these methods are anæsthetic for several hours, for long, that is to say, after the operation has been finished. When the narcosis is of only a light degree anæsthesia can be safely maintained over very long periods, even without the aid of local analgesics, and simply by the administration of very diluted chloroform vapour. And probably if obstetric operations are included in our correspondent's query the record will be found to be easily held by a case of this kind. In a difficult confinement case, where it is desirable to postpone instrumental delivery as long as possible, the expert anæsthetist will maintain light narcosis for over six hours, finishing with full surgical anæsthesia during the seventh, and the patient will recover quite well. For experimental purposes animals have been kept continuously under chloroform during more hours than this and on repeated occasions, but this was with no concurrent surgical operation. A story associated with the question of long operations is told of two eminent Scotchmen. The late Sir B. X—— was informed by his anæsthetist, Mr. C——, that the patient, about to undergo laparotomy, was not a good subject for prolonged anæsthesia. "Very well," replied the great man, "but remind me when I've finished just to scrape that patch of lupus on his nose before he comes round." After an hour the patient's condition was poor and the anæsthetist duly drew attention to it. A little later he stated that the condition was serious. Imperturbably the surgeon continued an elaborate anastomosis, until some furious bleeding in connexion with deep-seated adhesions brought the patient to death's door. The anæsthetist now tactfully pointed out that spontaneous respiration had almost ceased. Soon life was extinct, but an elaborate stitching and detailed closing of the abdomen were solemnly executed. Now came Mr. C——'s turn. "You'll not forget, Sir B——, to scrape the corpse's lupus!"

A SPECIAL meeting of the Society of Medical Officers of Health will be held at No. 1, Upper Montague-street, Russell-square, at 5 P.M., to-day, Friday, June 25th, when a discussion will be opened on Thrift in Our Food-supplies, by Dr. H. Meredith Richards, vice-chairman of the National Health Insurance Commissioners of Wales. The meeting and discussion will be open to all persons who are interested in this important question.

THE Cavendish lecture, on the Great Bowel in Health and Disease, by Professor Arthur Keith, will be delivered at the West London Hospital to-night (Friday, June 25th), at 8.15 P.M., and will be followed by the annual conversazione.

THE annual general meeting of the Poor-law Medical Officers' Association of England and Wales will be held on Tuesday, July 6th, at 4 P.M., in the Council Chamber of the British Medical Association, 429, Strand, London, W.C. The presence of all Poor-law medical officers is invited.

Sir Alfred Pearce Gould has been elected Vice-Chancellor of the University of London for the year 1915–16 in succession to Sir Wilmot Herringham.

THE Royal Society of Medicine has conferred on Sir John Williams, Bart., M.D., G.C.V.O., the Honorary Fellowship of the Society.

THE MANUFACTURE OF SALVARSAN PRODUCTS IN ENGLAND AND FRANCE.

A COMMUNICATION was made on behalf of the Medical Research Committee to THE LANCET of April 10th with regard to the nature of the control which the committee, at the request of the Board of Trade, has been exercising during the present emergency over the French and British preparations of salvarsan which are issued for sale in this country. It was then announced that the committee were satisfied that the products tested biologically under their direction were not inferior in safety or in efficacy to the original German preparations. It may be remarked here in addition that satisfactory results of clinical trials, as well as the results of the laboratory tests for toxicity, were in the hands of the committee before the issue of these products was authorised. The preparations in question have now for some months been available for use by the medical profession in this country, and it appears desirable to the committee that they should seek an opportunity of collecting from those who have had and are now having actual experience of the use of these British and French salvarsan products as complete a record as possible of the results of their practical application.

It is well known that many of the incidental results which may follow the administration of salvarsan can at present be only imperfectly explained. A certain proportion of unfavourable results, including some fatal results, is known to have followed the use of the original German products. While some of these have been explained as being due to imperfect precautions with regard to the purity of the water used in the injection, others have been attributable only to a supposed idiosyncrasy of the patient.

In order to appraise the significance of a favourable or of an unfavourable clinical experience found in the use of a particular batch of any given preparation, it is of great importance to have as complete a record as possible of the other cases which may have been treated with the batch in question. Records of this kind, when referred to the scientific workers engaged on behalf of the Medical Research Committee in the biological testing of the products, would allow a study of the closeness of the correlation which may exist between the clinical results on the one hand, and their laboratory results on the other. Such a comparison between the two kinds of experience would allow a determination of the question whether it is desirable to add to, or to modify in any way, the system of controls which has hitherto been applied, and which has followed the lines laid down by the experience of Ehrlich and his co-workers.

The committee venture to urge that members of the medical profession would be performing a service of national importance, in the present emergency, by keeping accurate records of cases in which the new preparations are used, and by placing such records at the disposal of the committee for their private information and guidance. Particular stress must be laid upon the desirability of recording in every case the name of the preparation used and the serial number applied by the manufacturer to the particular batch employed, together with full details as to dosage, the precautions taken to ensure purity of the water used, and finally, the results of the administration, both as regards therapeutic efficacy and the presence or absence of special incidental symptoms.

It is requested that records of this kind may be addressed to the Secretary of the Medical Research Committee, St. Stephen's House, Westminster.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Irish Medical Association.

AT the annual meeting of the Irish Medical Association last summer a resolution was carried directing the council to appoint a committee to make suggestions for the reorganisation of the association. A committee was appointed and presented a scheme to the council in April last. The council adopted the scheme with a few amendments, and articles and by-laws to make it effective were drafted. The chief change suggested was the reduction of the council from about 80 members to less than 50 by the elimination of most of those elected by the body of members as a whole as distinct from those representing branches. It was also proposed to abolish the offices of honorary secretary and honorary treasurer. To make the changes law it was necessary that they should be adopted at two special meetings of the association. At the first of these meetings the new articles of association had been carried and the greater part of the by-laws, when it was discovered that there was not a necessary quorum present for the transaction of business, and the proceedings were rendered useless.

The annual meeting of the association was held on June 16th at the Royal College of Surgeons, under the presidency of Mr. F. W. Kidd. There was a good attendance of members. The annual report of the council stated that the number of members had increased. Nine members had been removed from the list for accepting and persisting in retaining the position of "medical adviser" or "certifier" under the Insurance Act. The statement of accounts showed a credit balance of £465 2*s.* 4*d.* The report referring to the work of the reorganisation committee said that the report to the council of the association, after some amendments, had been referred back to [have the articles and by-laws drafted. The secretary informed the meeting of the fiasco of the special general meeting. After some discussion the reorganisation committee was reappointed, and the council was directed to summon special general meetings at convenient dates in the autumn to consider the draft articles and by-laws. Following the adoption of the report of the council there was a desultory discussion with regard to proposed coöperation with the British Medical Association, but no decision was arrived at. The following officers were re-elected: Mr. F. W. Kidd, president; Dr. Leonard Kidd, Mr. James Keating, Mr. J. B. Story, and Dr. J. Geraghty, vice-presidents; Dr. T. Donnelly, honorary secretary; and Dr. H. U. Byrne, honorary treasurer.

After a debate on the question of appointing a committee to collect evidence and report on Poor-law reform, the question was referred to the existing Poor-law subcommittee of the Irish Medical Committee.

The following resolution was passed unanimously:—

> This association protests against the appointment of medical advisers or part-time certifiers under the National

Insurance Act, and is of opinion that any medical man accepting and retaining such appointments should not be met professionally by consultants or other medical practitioners.

A Meeting of Medical Delegates.

A meeting of delegates of the medical profession of Ireland was held at the Royal College of Surgeons on June 15th, Mr. R. J. Johnstone being in the chair. Having reconstituted the Irish Medical Committee for another year, the meeting re-affirmed the decision that all medical certificates under the Insurance Act should be issued by the medical attendant of the insured person. A discussion took place with regard to tuberculosis work under the Insurance Act, and it was pointed out that the policy pursued by the Insurance Commissioners of excluding the medical attendant from any share in the administration of the sanatorium benefit prevented the discovery of early cases of the disease. A resolution was passed demanding that medical referees under the Insurance Act should notify the patient's medical attendant of the day and hour of a proposed visit to an insured person. Discussion also took place with reference to professional relations with "medical advisers," and it was held that no medical man should enter into consultation or other professional relation with an "adviser."

Royal Medical Benevolent Fund of Ireland.

The annual meeting of the Royal Medical Benevolent Fund Society was held on June 16th in the Royal College of Physicians. Sir John Moore read the annual report, which stated that the number of applicants during the year had been up to the average, but the aid given was far short of their requirements. The receipts had fallen considerably, and it had been necessary to recommend the curtailment of some of the grants. The total number of applications considered was 85; of these, 76 were from widows of medical men, six from or on behalf of orphans, and three from medical men themselves. The total amount of the grants recommended since last distribution was £1138. The honorary treasurer, Sir Stewart Woodhouse, read the treasurer's report. Including a balance of £476 6*s*. 8*d*. brought forward from the preceding year, the income of the society for the year ended April 30th was £1991 11*s*. 3*d*., a decrease of £180 7*s*. 1*d*. This decrease was doubtless owing to the pressing claims of the war now in progress upon the subscribers. On the credit side of the account the disbursements were £1461 3*s*. 8*d*.—viz., grants, £1347; miscellaneous payments, £114 3*s*. 8*d*.

The Royal College of Surgeons in Ireland and a Proposed Boycott.

The secretary to the Council of the Royal College of Surgeons in Ireland has distributed to the Fellows and Licentiates of that body copies of a correspondence which has recently passed between the Council and one of the Fellows. Mr. A., a Fellow, asked for an expression of opinion of the Council as to what his attitude and conduct should be in the following circumstances: His colleague, Mr. B., had accepted a "medical advisership" under the National Insurance Commissioners, thereby violating an agreement by which he had bound himself, as did the great majority of medical men in Ireland, not to accept any such office without the approval of the local medical committee, and then only if the conditions were in accordance with the declared policy of the Irish Medical Association. Consequent on Mr. B.'s accepting this office a meeting of the medical practitioners of the county had been held, and Mr. A. stated that he had been warned that unless he consented to boycott Mr. B. he would himself be subjected to boycott. He asked the Council for guidance. In reply, the Council states that unless Mr. B. can prove that he signed the undertaking under a misapprehension as to its scope and meaning, his violation of his written undertaking calls for the severest condemnation. As to a proposed boycott of Mr. B., the President and Council could not express any approval of such action. The letter severely condemns the action of any medical man who interferes in a professional capacity with the patients of other medical men, and by promising that the Council will deal severely with this offence, if proven, the communication will be of considerable assistance to the medical profession.

Belfast Water-supply.

The water in store in the Belfast reservoirs amounts at present to 1957 million gallons, which is 63 million gallons less than the storage on the corresponding date of last year. On a similar date in the dry year of 1911 the quantity available was 1811 million gallons. It appears that not only has the proposed reservoir in the Silent Valley of the Mourne Mountains not been begun, but that even if it were commenced it would not be completed for seven years; in the meantime people are in dread that, as before, Belfast will be placed on an intermittent supply. At a meeting of the Water Board, held on June 17th, the chairman quietly announced that, as soon as the war was over, the Board hoped something would be done. The Commissioners' inactivity was sharply condemned by certain members of the Board.

The King Edward Memorial Building, Belfast.

This memorial building, which will serve as an adjunct to the Royal Victoria Hospital, was opened recently by His Excellency the Lord Lieutenant of Ireland. The building owes its inception and erection to Lady Pirrie, who, as Lady Mayoress of Belfast in 1896, was instrumental in raising a sum of £100,000, to which she and Lord Pirrie contributed very handsome sums, and also raised a further sum of £48,000 as an endowment fund. Mr. J. Milne Barbour, D.L., said that in anticipation of the great demands which would probably be made in the near future on hospital accommodation for the treatment of sailors and soldiers wounded while fighting for their country, it had been decided to place the new building at the disposal of the hospital authorities at the earliest opportunity. Sir John Byers, chairman of the medical staff of the Royal Victoria Hospital, said that when the building was fully furnished the medical staff would be provided with some of the most recent practical adaptations of those sciences that were ancillary to medicine for the diagnosis and treatment of disease, and he hoped that the building would witness discoveries which would advance our knowledge in medicine and surgery. He pointed out the important work which would be carried on in the departments of vaccine therapy, electricity, and biochemistry under the direction respectively of Dr. T. Houston, Dr. J. C. Rankin, and Dr. J. E. MacIlwaine, and concluded by saying that without such institutes as that in which they were assembled those discoveries would never have been made by which our sailors and soldiers had been kept in a healthy and fit state and had been preserved from such diseases as typhoid fever, dysentery, and lockjaw.

June 21st.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

MACHINERY FOR DISTRIBUTION OF FUNDS IN BELGIUM.

WE have now received the detailed report of the session of the Aide et Protection aux Mèdecins et Pharmaciens Belges Sinistrés on May 6th, which continues the story of the distribution of funds by the Belgian Society. A financial statement showed that by the end of April 65,000 francs had been received and a little over 45,000 francs had been spent, great discretion having been obviously exercised in making the grants. The kind of case relieved has been fully illustrated already.

At this session the cases were mentioned which had already been found deserving of continued monthly relief, in accordance with the principle adopted at the last session, and the brief notes upon the selected objects of special help reveal some truly tragic situations. All the grants of money proposed by the eleemosynary subcommittee were unanimously adopted by the committee.

We have received through Professor Jacobs a statement of the financial position of the Belgian Society up to June 10th, which shows that the funds are still lasting out, but necessarily the disbursements are rapidly increasing. The Aide et Protection aux Médecins et Pharmaciens Sinistrés had received by the end of the first week in June 77,000 francs, and had disbursed 60,000 francs, while the extraordinarily modest expenses of administration amounted to less than 500 francs.

Since this date a substantial sum of money has been sent by the British Committee to the Belgian Committee, so that Dr. V. Péchère (president) and his admirable colleagues, M. A. Delacre, Dr. Laruelle (secretaries), and Dr. H. Coppez (treasurer) will be able to continue with good heart to meet the increased calls upon their resources.

THE WEEK'S SUBSCRIPTIONS.

The week's subscriptions include the handsome contribution from the New South Wales Branch, B.M.A., of £500, making with previous donations a total of £728 received from this generous source.

	£	*s.*	*d.*
Dumfries and Galloway Division, B. M. A. (per Dr. J. D. Robson, Hon. Sec.)—			
Dr. Robertson	0	10	0
Dr. H. Bryan Densham	5	5	0
Dr. A. G. Peter	2	2	0
Birmingham Local Committee (per Dr. Saundby, Hon Sec)—			
Dr. A. E. Richardson	5	5	0
Aberdeen Division, B.M.A.—			
Drs. Pirie, A. H. Lister, J. F. Christie, Croll, M. K. Booth, F. K. Smith, Alex Low, John A. Milne, Col. Mitchell, Drs. Gordon, Levack, Geddie, Stephen, Davidson, Smith, Slessor, J. P. Mitchell	28	0	0
Dr. Mary O'Brien	1	1	0
Dr. G. D. H. Carpenter	1	0	0
New South Wales Branch B.M.A.	500	0	0
North of England Branch of Fund (per Dr. James Don and Mr. A. S. Perceval, Hon. Secs.) (fifteenth donation, total £728 19*s.* 7*d.*)—			
Dr. J. J. Carruthers...	1	1	0
Dr. D. S. Park	1	1	0
Dr. F. Hunton	1	1	0
Dr. W. J. Carmichael	2	2	0
Mr. A. Williams	1	1	0
Mr. A. Mortimer	0	10	6
M. P. S.	0	3	0

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham-gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Ltd.

THE APPEAL FOR SURGICAL INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge the receipt of surgical instruments kindly contributed by the following donors since the publication of the last list:—

Dr. Gordon Brown, Chigwell, Essex; Barnsley Division of the B.M.A., second donation, per Dr. R. F. Castle.

Instruments should be sent to the Apothecaries Hall, Blackfriars, E.C.

THE NATIONAL INSURANCE ACT.

London Panel Committee: War Emergencies and Local Coöperation.

THE London Panel Committee on June 22nd discussed the formation of local associations of practitioners on the panel. It was urged by the General Purposes Committee that such bodies would be of great value in dealing with problems peculiar to localities, in removing local grievances, and in preserving the interests of practitioners on the panel. In each area coöperative arrangements might be made for weekly and periodical holidays; rotas of medical referees might be appointed to advise in difficult or doubtful cases; in districts in which sickness incidence was heavy practitioners might encourage the provision of lectures on health and work for sanitary reforms tending to benefit health. Negotiations with hospitals and arrangements for specialist consultations might sometimes be better carried out by a local association. The committee passed a resolution expressing the opinion that practitioners on the panel in the various areas of London should be grouped under district panel associations.

A statement was submitted showing that the number of practitioners on the panel resident in London was 1550, of whom 457 were registered since 1900, and presumably were eligible for service with the Forces. The number of practitioners on the panel at present absent on military duty was 125. The General Purposes Subcommittee had pointed out that it would appear that only about one-quarter of the eligible practitioners were actually serving with the Forces, and that the difficulty was a fear that on returning practitioners would find their practices much depleted by reason of the transference of insured persons to other lists. The Panel Committee passed a series of resolutions expressing the opinions that:—

1. The right of an insured person to transfer should be temporarily suspended.
2. That practitioners on the panel should collectively arrange to release an adequate proportion of their number for service with the Forces.
3. That in the event of a colleague accepting a commission the practitioners undertaking the treatment of the persons on the list should, in normal circumstances, permit the colleague to retain 50 per cent. of the income from the insurance practice.

A detailed scheme embodying these resolutions was also approved.

The Local Medical and Panel Committees and the War.

At the conference of representatives of Local Medical and Panel Committees convened by the British Medical Association on June 16th the number of motions placed on the agenda with regard to insured persons who may be discharged from the services incapacitated for work showed the serious apprehension felt by medical men on the panels as to their future position and the effect likely to be produced upon it by the war. The original motion to consider the questions arising having been assigned to the chairman, those set down by various Local Medical and Panel Committees dealt with various aspects of the case and suggested remedies. From Liverpool came the proposal that Parliament should make some grant to practitioners on the panels to compensate them for the serious charge likely to be imposed upon them by the return of many of their "best lives" as broken and disabled men. The Croydon Committee asked for an increased capitation fee in respect of such patients, the Nottingham Committee suggesting, as an alternative for a higher rate of remuneration, payment for work done, "in view of the fact that circumstances have arisen which were not contemplated when the existing terms were arranged." The Northumberland Panel Committee, by the terms of its motion, protested against the direction contained in Memo. 210 I.C., making insured persons returning to civil life free to select their method of obtaining medical treatment as though newly entering upon insurance. This, it was pointed out, would tend to increase the number of unallotted patients. The approval of the Insurance Act Committee of the British Medical Association had already been given to an arrangement for the reinstatement of the insured person to the list of the medical man attending him before his enlistment, subject to the right of the insured person to change his medical attendant, and to that of the medical man to refuse to reaccept the insured person.

The New Certification System.

One of the most interesting of the documents circulated among the representatives of Local Medical and Panel Committees with a view to the conference contained information as to the attitude of the Approved Societies with regard to the certification of chronic cases. A letter had been sent to the societies calling attention to the way in which the subject is treated in Memo. 211 of the Insurance Commissioners, and to the hardship, accentuated by the stress of war conditions, needlessly caused by the requirement of weekly certificates. To this letter 45 replies had been received, of which 31 intimated that weekly certificates were considered by the societies affected to be unnecessary, or were likely to be declared so. Nine societies merely acknowledged the letter or stated that it would receive consideration. Five replies were of an unfavourable character, but in some of these cases further correspondence appeared to be likely to obtain the concessions asked for. On the whole, therefore, the societies may fairly be said to take a reasonable view of the matter, in which they are not asked to sacrifice any principle of importance affecting either their own interests or the personal interests of their members.

The Panel Medico-Political Union.

At the recent annual general meeting of the Panel Medico-Political Union, now entering the second year of its existence, the result of the elections of officers and council for the coming 12 months was made public. Among those re-elected was the chairman, Dr. W. Coode Adams, the other officers chosen being: Vice-Presidents, Mr. J. A. Angus, Dr. H. J. Cardale, Dr. H. G. Cowie, and Mr. R. J. Farman; treasurer, Dr. G. R. Young; trustees, Dr. W. Coode Adams, Dr. G. B. Batten, and Mr. F. H. Lane. In addition to these, 30 names of practitioners chosen to be members of the council were announced. In his address the President dwelt upon the intention of the Union to exercise political influence on behalf of members of the panels and to obtain the support of members of the House of Commons by exercising such influence on their behalf, or the reverse, in their constituencies. Among objects aimed at would be the obtaining of better representation upon Insurance Committees for panel practitioners, and also more direct representation for insured persons. The holding back of money due by the action of suspense slips was a grievance to which special and immediate attention would be directed, as well as the question of insured persons returning from the war invalided.

Coventry Insurance Committee.

The Coventry Insurance Committee at a recent meeting considered the question of surcharges made by the Treasury auditor in respect of expenditure incurred through representatives of the committee attending certain conferences connected with insurance matters. A resolution in terms recommended by the finance subcommittee was passed protesting against the surcharges, and representing that the expenditure disallowed was reasonable and necessary to the carrying out of the committee's work, there being, moreover, no statutory delimitation of the expenses which might rightly be incurred. It was argued in the course of the discussion that it was of the utmost importance to the committee that it should be in touch with other insurance committees, and that this object was attainable only through taking part in the conferences referred to. Important criticism of the financial provisions of the Insurance Acts for the treatment of tuberculosis took place at the same meeting. It was pointed out that in the provision of treatment, institutional and domiciliary, expenditure was being incurred and undertaken at Coventry which could not safely be continued, a medical member of the committee expressing the opinion that the situation arose through no fault of the committee, "for at the beginning of the Act people were promised all sorts of benefits, which, however, had been shown to be quite impossible." The speaker submitted that the only solution of the difficulty would be the provision of money by the Treasury on a much larger scale. Under the Act the amount of consumption and the extent of the curative measures necessary had been very much under-estimated. The chairman, in making observations to a similar effect, argued that the whole basis of the scheme was wrong. With reference to suggestions made that the prevention of consumption by sanitary measures would be found more effective than attempts to cure it, he was of the opinion that before this could be done the amendment of several Acts of Parliament besides the Insurance Acts would be required. The fact remained, he said, that the work of the sanatorium benefit subcommittee had reached such a stage in its development that the subcommittee could not keep on under existing conditions, and he wanted the insured public to understand that the Insurance Committee had no desire to limit the rights of any insured person, but that it was bound, having regard to its commitments, to adopt a different attitude.

MEDICINE AND THE LAW.

Modern Echoes of a Famous Crime: the Trial of the Stauntons.

NEARLY 40 years ago, in September, 1877, four persons, Louis and Patrick Staunton, Elizabeth, wife of Patrick Staunton, and Alice Rhodes, her sister, were convicted at the Old Bailey for the murder of Harriet, wife of Louis Staunton, and were sentenced to death by Mr. Justice Hawkins, who, according to such public opinion as found immediate expression, had brought to a successful issue the first trial for murder conducted by him. The capital sentences, however, were not carried out, a result largely due to the efforts of the medical profession and of THE LANCET. The case and its history have recently received prominent notice in the *Cornhill* from the pen of Sir Edward Clarke, who defended Patrick Staunton, and who in his résumé of the trial made criticisms of a severe character upon the late Lord Brampton, better known as Mr. Justice Hawkins. We are not here concerned with the views expressed by one of the most able and eloquent advocates of the last generation upon a judge who, whatever his demerits, had many shining qualities, but we did at the time of the "Penge mystery" interest ourselves considerably in the fate of the Stauntons and Alice Rhodes, and in securing for the medical evidence given on their behalf the recognition which the judge had denied to it.

These things contributed not a little to saving from the gallows four persons, who by whatever acts of cruelty and immorality they might severally have deserved public execration, certainly had not murdered Harriet Staunton by starving her to death, the only way in which they were accused of committing the crime charged against them. Whatever opinions leaders of the Bar may have held of Mr. Justice Hawkins during his long career as a judge in civil or in criminal cases, of his fairness or unfairness, of his clemency or the reverse, he undoubtedly made a very ill-advised effort to secure conviction for the capital crime in a case in which the medical evidence was of supreme importance and in which medical evidence of the highest quality was opposed to the conclusion at which he desired the jury to arrive. In order to do this he was compelled to belittle the expert evidence called for the defence, and he virtually ignored it. He practically omitted from his summing-up all appreciation of the testimony of Dr. J. S. Bristowe and Dr. J. F. Payne, respectively a most wise physician and a most careful pathologist, and alike scrupulously careful observers; and he accordingly obtained a verdict which the medical profession immediately recognised as being contrary to justice. The whole of the squalid story of the Staunton case has been admirably compiled by the late Mr. J. B. Atlay.[1] Harriet Staunton was treated in different degrees by the four persons named in the indictment with abominable neglect and cruelty, but, as THE LANCET of Oct. 6th, 1877, put it in a leading article commenting upon the trial: "It must obviously be impossible to prove murder by starvation without first showing death by starvation." As we then stated, holding an opinion from which we see no reason to depart, the attempt to affirm the primary proposition failed. The post-mortem appearances were not consistent with the hypothesis of death from the cause assigned. They afforded irresistible evidence of other factors at work, although it was not, owing to the defective manner in which the body was examined, possible to say which of several morbid conditions proved fatal to life.

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[1] Trial of the Stauntons. Edited by J. B. Atlay, Barrister-at-law. Wm. Hodge and Co.

We do not suggest that the verdict actually arrived at by the jury was unsupported by medical evidence entitled to due consideration. Several medical practitioners of standing, two of whom were called as experts, supported the view that starvation caused the death of Harriet Staunton, but the ignored scientific evidence was beyond question better qualified to command attention than that which secured the adverse verdict, and the fact that Dr. Bristowe and Dr. Payne had not seen the deceased in life, or her body after death, did not materially discount the value of their opinions, as the judge in his brief reference to their evidence suggested.

Expert witnesses as a rule rely upon the facts described by others in forming their opinions, and if the observers are qualified by training the expert's opinion rests upon a satisfactory foundation. In this instance the value of the medical evidence for the defence might have been said to have gained, rather than to have lost, by its dependence upon that adduced by the Crown. Those who gave it accepted the sworn statements of witnesses for the Crown as to what they had seen or had failed to observe, but drew the scientific deductions. Perusal of the evidence many years after, indeed, suggests that in his later years the same judge would probably have taken a different course, either devoting more time to criticising and weighing the evidence of Mr. Payne and Dr. Bristowe even if only to endeavour to demolish it, or recognising its force in preventing the establishment of the case for the Crown "beyond any reasonable doubt." He must also have been aware that he had shut out upon technical grounds the evidence for the defence of a very highly qualified witness, although he may have assumed that he with the others would be reduced to permanent silence by the jury's verdict.

A repetition of that which occurred in 1877, when the four prisoners solemnly condemned to death for Harriet Staunton's alleged murder were reprieved almost immediately, is not likely to occur now. It might do so, of course, but the progress of science, protecting human life in many ways, has added certainty to the results of medical investigation into causes of death and similar matters, and, with greater sureness that the truth will have been arrived at, weight is given with greater confidence to the best medical evidence by judge and jury alike. We need only refer to the trials of the murderers Crippen and Seddon in order to remind ourselves of the public confidence in the establishment of justice by medical evidence in cases where the material facts are incomprehensible so far as the general public is concerned. There was a perceptible agitation for reprieve in each of these cases, but it rightly came to nothing.

THE SERVICES.

Royal Navy Medical Service.

THE undermentioned have been granted temporary commissions as Surgeons in His Majesty's Fleet:—Dated June 16th: William Lovell and Charles Stuart Ogilvy. Dated June 17th: Edwin John Tongue.

Army Medical Service.

Major Sir Berkeley G. A. Moynihan, R.A.M.C. (T.), to be temporary Lieutenant-Colonel (dated June 10th).

Royal Army Medical Corps.

Captain William McConaghy is seconded for service with the Egyptian Army (dated June 5th).

Temporary Captain Sydney G. L. Catchlove relinquishes his commission (dated June 11th).

Temporary Lieutenant Thomas M. Watt relinquishes his commission (dated March 1st).

The undermentioned to be temporary Majors:—Dated May 27th: Alexander Johnstone. Dated June 7th: George Harry Melville Dunlop and Henry Alexis Thomson.

The undermentioned to be temporary Captains:—Dated May 1st: Arthur George Whitehorne-Cole. Dated May 22nd: Walter Sydney Lazarue-Barlow.

The undermentioned non-commissioned officers and men of the Canadian Army Medical Corps to be temporary Lieutenants:—Dated May 26th: Sergeants Robert Beattie Martin, Harry Roy Smith, Paul Michael O'Sullivan, Louis Edwin Williams, David Edmund Staunton Wishart, and Gerald Allison; Corporals Clifford M. Keiller, David Emerson Scott, and Stanley Stafford Ball; Lance-Corporals Herbert Carl Martin and Thomas Harold Douglas Storms; Privates Thomas Daily Cumberland, Donald Thomas Fraser, Richard Collier Coatsworth, Harry Karl Groff, Louis Emile Belcourt, Morley Edward Gorman, Maurice Round Helliwell, Thomas Harold Crews, William Ray Hodge, Harold Parrish Hamilton, Frederick Walter Clement, Athol Alexander Moon, Stanley Young Walsh, Arthur McKnight Bell.

The undermentioned to be temporary Lieutenants:—Dated April 14th: Harold Robert Dew, Robert Kenneth Birnie, Jack Morlet, Albert Weigall, George Clifford Scantlebury, James Garnet Sleeman, William Alfred Leslie Harrison Henderson, Albert Wilber Bretherton, Cyril Checchi, Frank William Augustus Ponsford, Walter Cecil Marsden, Thomas Edwin George, Alfred John Trinca, Raymond William Ryan, Nigel Lovat Prichard, William Arthur Bowman, William Alexander Hamilton Birrell, William Rogerson, Wilberforce Stephen Newton, and George Chadwell Bury. Dated April 20th: Francis William Stone, Frank Harold Looney, Arthur Ernest Stenning, Michael Harold Sorokiewich, Robert Welton Hogg, Johnston Hughston, Charles Humphrey Lloyd, Cecil Gordon McAdam, and Roy Baldwin Minnett. Dated May 1st: William Moore Skipwith Robinson. Dated May 10th: John Joseph Middleton. Dated May 13th: Dominick John Cannon. Dated May 20th: Samuel Lloyd Corry, Malcolm Macnicol, Percy Templeton, Edgar Roe Lyth, Stephen Galt Trail, Frank Melville Harvey, and Tudor Benson Evans. Dated May 21st: Ellis Gordon Goldie, James Murray Duff Mitchell, George Peter Taylor, Edmond Ryan, John Charles Michell, John Low, Edward Beresford Collings, Albert Edward Blackburn, Francis Anderson, John Anderson, James Montgomery Anderson, Edward Scott White, Thomas Trevor Apsimon, Maurice Aloysius Power, Henry Glendinning Davison, John Clark, William O'Brien, Thomas Kirkwood, Allen Edgar Thompson, Augustus Beauchamp Northcote, James Samuel Richard Weir, Robert Charles De Lacey, Henry Richard Hurry, and Claude Robinson Lucas. Dated May 22nd: Frederic William Waudby Griffin, Alexander Newton Clemenger, Daniel Charles Evans, and Herbert Frank Willington. Dated May 24th: Israel Allaun, James Lawson Williams, William Henry Warwick, Roy Darley Clayton, Gerald Henry Davy, Frank Ernest Reynolds, and Charles Brehmer Heald. Dated May 25th: James Cunningham, Lancelot Gordon McCune, Bernard Geoffrey Klein, James Davidson MacKay, Henry Donald Welply, William Taylor Buchan, Ernest Coleman, Robert James Allsopp, John Gordon Smith Macpherson, John Proctor, Donald McIntyre, David Charles Welsh, Arthur Leslie Walters, William Ledingham Christie, John Lyn Dimond, Dan Arthur Powell, Arthur Edward Clarke, Robert Hugh Drennan, Wilfred Angel Easton, Arthur Noel Houghton, Herbert Playford Sheppard, Raymond Alexander Hannay Atkinson, Allan Massey, William Rice Meredith, Francis Joseph Sadler, Spencer Churchill, and Douglas Allan. Dated May 26th: Watts Edmondson, Charles Salkeld, Arthur John Clayton, John Koble Milne Dickie, Hew William Scott-Wilson, and Arthur Geoffrey Shera. Dated May 27th: Arthur Edward Lyster, James Lochhead Gregory, Lester Ernest Ashley Emile, William Minty Badenoch, Richard Nunn, Sidney Winslow Woollett, Thomas Hutchinson, Andrew Philip, Nelson West Jenkin, Adam Brown, Arthur James Lewis, Hugh James McCurrick, Charles Samuel Woodd, William Edward Nickolls Dunn, Patrick Aloysius Doyle, Kirsop Bainbridge James Vickers, George Brown Crawford, David Fettes, Barron Norman Sinclair, James Leslie Callaghan, and William Hunter Brown. Dated May 28th: Arthur Hill Laird, Malcolm Mauson, Harold Willis Scawin, Robert Scott, Mark O'Brien, Kenneth Fraser, Leslie Gordon Tait, George Kirkwood Allan, James Henderson Yule, John Alexander Mortimer, William Duncan Lawrie, William Sibbald Campbell, Norman Alexander Aylmer Hughes, Douglas Craig, Percy Charles Garrett, Leslie Wilson Evans, Reginald Norman Porritt, David Watt Torrance, Reginald Inglis Douglas, John Barron Scott, and James Finlay Alexander. Dated May 29th: Thomas Joseph Lydon, Frederick William Campbell, Andrew Louis Krogh, and Paul Ransome Browning. Dated May 31st: William Johnson Symes, Robert Brookes, and Michael Abdy Collins. Dated June 5th: Lieutenant Fraser Baillie Gurd, Canadian Army Medical Corps.

Frederick Hall to be temporary honorary Lieutenant whilst serving with the St. John Ambulance Brigade Hospital (dated June 10th).

Ralph Marsh de Mowbray to be temporary Lieutenant whilst serving with the British Red Cross Hospital, Netley (dated April 27th).

Arthur Conyears Inman is granted temporarily the honorary rank of Lieutenant (dated June 14th).

Special Reserve of Officers.

Royal Army Medical Corps.

The undermentioned Lieutenants (on probation) are confirmed in their rank:—Frank H. Kennedy, Norman B. Graham, James Lawson, Francis L. P. G. Bennett, Geoffrey B. Egerton, and Patrick A. Clements.

John Galloway Hendry (late Cadet Lance-Corporal, Glasgow University Contingent, Officers Training Corps) to be Lieutenant (on probation) (dated May 8th).

William McElrea Snodgrass (late Cadet Lance-Corporal, Dublin University Contingent, Officers Training Corps) to be Lieutenant (on probation) (dated May 30th).

TERRITORIAL FORCE.

Army Medical Service.

Major Ernest C. Freeman, Reserve of Officers, from Deputy Assistant Director of Medical Services, to be Assistant Director of Medical Services, East Anglian Division, with the rank of Colonel.

Lieutenant-Colonel David L. Hamilton, from 2nd Home Counties Field Ambulance, to be Deputy Assistant Director of Medical Services, Home Counties Division.

Royal Army Medical Corps.

Captain Charles A. Ballance, M.V.O., is seconded whilst holding a temporary commission in the Royal Army Medical Corps.

Captain John M. Fortescue-Brickdale is seconded for service with the Expeditionary Force.

3rd North Midland Field Ambulance: Lieutenant Crichton S. Lee is restored to the establishment.

4th London General Hospital: Captain Thomas C. English is seconded for service with the Expeditionary Force.

1st Northern General Hospital: James Ackworth Menzies to be Lieutenant.

2nd Northern General Hospital: Major James A. Coupland is seconded for service with the Expeditionary Force.

4th Northern General Hospital: Captain Frederick E. Withers is seconded for service with the Expeditionary Force.

2nd Southern General Hospital: Captain Ernest W. H. Groves is seconded for service with the Expeditionary Force.

Scottish Horse Mounted Brigade Field Ambulance: James Alexander Mathers (late Lieutenant, Scottish Horse Yeomanry) to be Captain (temporary).

2nd South Western Mounted Brigade Field Ambulance: John Hamilton Cumming to be Lieutenant.

2nd East Anglian Field Ambulance: Saville James Fielding to be Lieutenant.

2nd Northumbrian Field Ambulance: Christopher Rogers to be Lieutenant.

2nd Eastern General Hospital: Ernest Fryer Ballard to be Lieutenant.

2nd Home Counties Field Ambulance: Benjamin Allen Bull to be Lieutenant.

2nd London (City of London) General Hospital: Major Charters J. Symonds is seconded whilst holding a temporary commission in the Royal Army Medical Corps.

3rd Northumbrian Field Ambulance: John Gray (late Major, 6th Battalion, The Durham Light Infantry) to be Major (temporary).

Welsh Divisional Sanitary Section: Captain Robert Proudfoot, from Sanitary Service, to be Captain.

East Anglian Casualty Clearing Station: Major John H. Dauber to be Lieutenant-Colonel. Lieutenant Frederick W. Lewis (late Surgeon-Captain, South African Constabulary) to be temporary Captain.

1st East Anglian Field Ambulance: Captain William D. Watson, from Attached to Units other than Medical Units, to be Captain (temporary).

3rd Highland Field Ambulance: Lieutenant Edwin A. Bell resigns his commission.

3rd East Lancashire Field Ambulance: Wilfred Edwin Rothwell to be Lieutenant.

2nd West Lancashire Field Ambulance: William Francis Young to be Lieutenant.

1st Southern General Hospital: William Kirkpatrick to be Major, whose services will be available on mobilisation.

3rd Southern General Hospital: Captain Arthur G. Kewley, from 1st North Midland Field Ambulance, to be Captain, whose services will be available on mobilisation.

2nd Western General Hospital: Frank Chadwick to be Lieutenant.

Sanitary Service: Captain Alexander C. Farquharson, from Attached to Units other than Medical Units, to be Sanitary Officer, Northumbrian (Reserve) Division.

East Anglian Divisional Sanitary Section: Walter Francis Corfield (late Captain, 2nd London Sanitary Company) to be Captain.

West Lancashire Casualty Clearing Station: Cadet Theodore Howard Somervell, from University of London Contingent, Senior Division, Officers Training Corps, to be Lieutenant.

Attached to Units other than Medical Units.—Major Percival E. Barber is seconded for service with the R.A.M.C. To be Captains: Captain Lawder T. Whelan, from Sanitary Service, George Raymond (late Captain, 8th (Isle of Wight Rifles, "Princess Beatrice's") Battalion, The Hampshire Regiment), and Lieutenant Robert L. Routledge.

TERRITORIAL FORCE RESERVE.

Royal Army Medical Corps.

Colonel John R. I. Raywood (late Assistant Director of Medical Services, South Midland Division) to be Colonel.

VITAL STATISTICS.

VITAL STATISTICS OF LONDON DURING MAY, 1915.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the 10 diseases specified in the table was equal to an annual rate of 6·4 per 1000 of the population, estimated at 4,516,612 persons; in the three preceding months the rates were 7·4, 6·6, and 6·3 per 1000 respectively. The lowest rates last month were recorded in Hampstead, Stoke Newington, Bermondsey, Camberwell, and Lewisham; and the highest rates in Paddington, the City of Westminster, St. Marylebone, Stepney, Southwark, and Woolwich. One case of small-pox, which belonged to Stepney, was notified during the month. The prevalence of scarlet fever showed a slight increase as compared with the two preceding months; among the metropolitan boroughs this disease was proportionally most prevalent last month in Hammersmith, the City of Westminster, St. Marylebone, Finsbury, Stepney, and Woolwich. The Metropolitan Asylums Hospitals contained 2221 scarlet fever patients at the end of last month, against 2989, 2514, and 2339 at the end of the three preceding months; the weekly admissions averaged 283, against 324, 278, and 272 in the three preceding months. Diphtheria was less prevalent than it had been in any other recent month; the greatest proportional prevalence of this disease was recorded in St. Pancras, the City of London, Bethnal Green, Stepney, and Poplar. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1562, 1362, and 1223 at the end of the three preceding months, had further declined to 1083 at the end of last month; the weekly admissions averaged 128, against 172, 142, and 136 in the three preceding months. The prevalence of enteric fever showed a marked decline last month; the 40 notified cases of this disease included 6 in Hackney, 4 each in St. Pancras, Bethnal Green, Lambeth, and Deptford, and 3 each in Stepney, Bermondsey, and Camberwell. The Metropolitan Asylums Hospitals contained 49 enteric fever patients at the end of last month, against 64, 46, and 60 at the end of the three preceding months; the weekly admissions averaged 6, against 13, 8, and 13 in the three preceding months. Erysipelas was proportionally most prevalent in Paddington, Shoreditch, Bethnal Green, Southwark, and Woolwich. The 32 cases of puerperal fever notified during the month included 4 each in Kensington and Southwark, 3 in Wandsworth, and 2 each in Chelsea, St. Pancras, Islington, Stepney, Lambeth, and Camberwell. The 87 cases of cerebro-spinal meningitis included 9 in Wandsworth, 8 in Kensington, 7 in Hammersmith, 6 in Shoreditch, and 5 each in Stepney, Battersea, and Camberwell. The 6 cases of poliomyelitis belonged respectively to Hampstead, St. Pancras, Islington, Bethnal Green, Wandsworth, and Woolwich.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex and age constitutions of the several boroughs. During the four weeks ending May 29th the deaths of 5065 London residents were registered, equal to an annual rate of 14·6 per 1000; in the three preceding months the rates were 20·7, 21·2, and 19·6 per 1000 respectively. The death-rates last month ranged from 10·9 in Woolwich, 11·1 in Wandsworth, 11·3 in Paddington, 11·5 in Lewisham, and 11·7 in Hampstead, to 16·5 in Bethnal Green, 16·6 in Finsbury, 16·8 in Battersea, 18·2 in Shoreditch, 18·6 in Chelsea, 19·7 in Bermondsey, and 23·1 in the City of London. The 5065 deaths from all causes included 537 which were referred to the principal infectious diseases; of these, 269 resulted from measles, 20 from scarlet fever, 41 from diphtheria, 137 from whooping-cough, 10 from enteric fever, and 60 among children under 2 years of age from diarrhœa and enteritis. The lowest death-rates from these diseases in the aggregate were recorded in Kensington, Westminster, Hampstead, the City of London, Stepney, Lambeth, and Camberwell; and the highest rates in Chelsea, Islington, Shoreditch, Bethnal Green, Poplar, Bermondsey, and Battersea. The 269 deaths from measles were 119 in excess of the corrected average number; this disease was proportionally most fatal last month in Chelsea, Islington, Shoreditch, Bethnal Green, Poplar, Bermondsey, and Battersea. The 20 fatal cases of scarlet fever were 4 in excess of the average, and included 3 in Fulham, 3 in Islington, and 2 each in Hammersmith and Southwark. The 41 deaths from diphtheria

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING MAY, 1915.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1914.	NOTIFIED CASES OF INFECTIOUS DISEASE.												DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON...	**4,516,612**	**1**	**1214**	**544**	**1**	**40**	—	**32**	**288**	**87**	**6**	**2213**	**6·4**	—	**269**	**20**	**41**	**137**	**10**	**60**	**537**	**1·5**	**5065**	**14·6**
West Districts.																								
Paddington	142,055	—	47	20	—	—	—	—	17	2	—	86	7·9	—	4	1	1	3	—	3	12	1·1	124	11·3
Kensington	170,817	—	36	15	—	2	—	4	8	8	—	73	5·6	—	7	1	1	1	—	2	12	0·9	186	14·1
Hammersmith	124,750	—	41	14	—	—	—	—	4	7	—	66	6 9	—	3	2	3	—	—	3	11	1·1	146	15·1
Fulham	158,849	—	45	16	—	—	—	1	9	3	—	74	6·1	—	13	3	2	7	—	1	26	2·1	156	13·2
Chelsea	63,791	—	14	8	—	—	—	2	4	—	—	28	5·7	—	16	1	—	—	—	—	17	3·5	96	18·6
City of Westminster	152,346	—	71	19	—	—	—	—	5	3	—	98	8 4	—	4	—	1	1	—	2	8	0·7	152	13·7
North Districts.																								
St. Marylebone	112,892	—	43	14	—	—	—	—	9	1	—	67	7·7	—	6	—	—	3	—	—	9	1·0	109	12·8
Hampstead	86,731	—	14	7	—	—	—	—	2	2	1	26	3·9	—	1	—	—	1	—	—	2	0·3	74	11·7
St. Pancras	212,497	—	53	38	—	4	—	2	13	4	1	115	7·1	—	14	—	1	9	—	5	29	1·8	229	14·0
Islington	324,764	—	94	34	—	—	—	2	8	4	1	143	5·7	—	31	3	3	16	—	7	60	2·4	402	15·7
Stoke Newington	50,454	—	9	2	—	—	—	—	2	2	—	15	3·9	—	2	—	—	1	—	1	4	1·0	54	13·3
Hackney	223,724	—	51	21	—	6	—	—	17	2	—	97	5·7	—	3	—	1	12	4	4	24	1·4	252	14·8
Central Districts.																								
Holborn	45,861	—	12	1	—	1	—	—	1	3	—	18	5·1	—	2	—	—	2	1	—	5	1·4	51	14·5
Finsbury	83,212	—	34	6	—	—	—	1	2	1	—	44	6·9	—	3	—	—	7	—	1	11	1·7	107	16·6
City of London	17,129	—	—	6	—	—	—	—	—	—	—	6	4·6	—	1	—	—	—	—	—	1	0·8	29	23·1
East Districts.																								
Shoreditch	108,869	—	25	17	—	—	—	1	12	6	—	61	7·3	—	18	1	2	4	—	3	28	3·4	147	18·2
Bethnal Green	127,662	—	35	27	—	4	—	—	17	2	1	86	8·8	—	13	—	3	6	—	3	25	2·6	156	16·5
Stepney	273,265	1	88	68	1	3	—	2	23	5	—	191	9·1	—	10	—	5	2	—	2	19	0·9	317	15·8
Poplar	160,222	—	36	35	—	2	—	1	17	2	—	93	7·6	—	16	1	2	6	1	3	29	2·4	200	16·1
South Districts.																								
Southwark	186,941	—	55	28	—	1	—	4	25	—	—	113	7·9	—	12	2	2	3	2	5	26	1·8	227	15·9
Bermondsey	124,213	—	22	8	—	3	—	1	11	1	—	46	4·8	—	15	—	1	12	—	2	30	3·1	188	19·7
Lambeth	296,724	—	65	32	—	4	—	2	16	4	—	123	5·4	—	5	1	4	4	—	3	17	0·7	350	15·1
Battersea	167,338	—	44	15	—	1	—	1	4	5	—	70	5·5	—	23	1	1	10	—	—	35	2·7	213	16·8
Wandsworth	338,998	—	99	29	—	1	—	3	9	9	1	151	5·8	—	17	1	3	6	—	4	31	1·2	288	11·1
Camberwell	262,020	—	63	15	—	3	—	2	13	5	—	101	5·0	—	4	1	1	4	2	1	13	0·6	301	14·8
Deptford	109,182	—	22	10	—	4	—	1	9	1	—	47	5·6	—	8	—	1	8	—	1	18	2·1	138	16·3
Greenwich	96,037	—	22	6	—	—	—	—	9	2	—	39	5·3	—	6	—	1	5	—	—	12	1·6	118	15·7
Lewisham	172,433	—	33	15	—	—	—	1	4	—	—	53	4·0	—	8	—	—	2	—	3	13	1·0	155	11·5
Woolwich	122,836	—	40	18	—	1	—	1	14	3	1	78	8·3	—	4	1	2	2	—	1	10	1·1	100	10·9
Port of London	—	—	1	—	—	—	—	—	4	—	—	5	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex and age constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

were 9 above the average, and included 5 in Stepney, 4 in Lambeth, and 3 each in Hammersmith, Islington, Bethnal Green, and Wandsworth. The 137 deaths from whooping-cough were 22 above the corrected average; this disease was proportionally most fatal last month in Hackney, Finsbury, Bermondsey, Battersea, Deptford, and Greenwich. The 10 fatal cases of enteric fever were one in excess of the corrected average number, and included 4 in Hackney and 2 each in Southwark and Camberwell. The mortality from diarrhœa and enteritis among children under 2 years of age was proportionally greatest in Paddington, Hammersmith, St. Pancras, Islington, Shoreditch, Bethnal Green, and Southwark. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was 48·1 per cent. above the average.

HEALTH OF ENGLISH TOWNS.

In the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8092 births and 4297 deaths were registered during the week ended Saturday, June 19th. The annual rate of mortality in these towns, which had been 13·7, 13·9, and 13·5 per 1000 in the three preceding weeks, further fell in the week under notice to 12·4 per 1000 of their aggregate population, estimated at 18,136,180 persons at the middle of last year. During the first 11 weeks of the current quarter the mean annual death-rate in these towns averaged 15·7, against 15·8 per 1000 in the metropolis. The annual death-rate last week ranged from 4·1 in Hornsey, 6·2 in Leyton, 6·6 in Ealing, 7·0 in Walthamstow and in Warrington, and 7·5 in Willesden, to 18·4 in Barnsley, 19·3 in Blackpool, 21·0 in Middlesbrough, 21·6 in Gillingham, and 21·8 in West Bromwich.

The 4297 deaths from all causes were 400 fewer than the number in the previous week, and included 374 which were referred to the principal epidemic diseases, against 489 and 449 in the two preceding weeks. Of these 374 deaths, 162 resulted from measles, 68 from infantile diarrhœal diseases, 60 from whooping-cough, 45 from diphtheria, 29 from scarlet fever, and 10 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases did not exceed 1·1 per 1000, which is the lowest rate recorded in any week of the current year. The deaths attributed to measles, which had been 221, 239, and 215 in the three preceding weeks, further declined to 162 last week, and caused the highest annual death-rates of 2·3 in Sheffield, 2·9 in Barnsley, 4·4 in Walsall, 4·5 in Middlesbrough, and 5·3 in West Bromwich. The deaths of infants (under 2 years) referred to diarrhœa and enteritis, which had been 64, 75, and 90 in the three preceding weeks, fell to 68 last week, and included 12 in London and 4 each in West Ham, Liverpool, Salford, and Sheffield. The fatal cases of whooping-cough, which had declined from 137 to 75 in the four preceding weeks, further fell to 60 last week, of which 24 occurred in London and 3 each in Birmingham, Liverpool, St. Helens, Leeds, and Sheffield. The deaths attributed to diphtheria, which had been 31, 50, and 33 in the three preceding weeks, rose to 45 last week, and included 6 in London, 5 in Southampton, and 3 in Leyton. The deaths referred to scarlet fever, which had increased from 20 to 29 in the four preceding weeks, were again 29 last week, of which 9 were registered in London, 4 in Manchester, 3 in Salford, and 2 each in Edmonton and Liverpool. The fatal cases of enteric fever, which had been 11, 13, and 7 in the three preceding weeks, rose to 10 last week, and included 2 in London.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2252, 2267, and 2336 at the end of the three preceding weeks, had further increased to 2373 on Saturday last; 330 new cases were admitted during the week, against 257, 327, and 330 in the three preceding weeks. These hospitals also contained on Saturday last 1048 cases of diphtheria, 77 of measles, 54 of enteric fever, and 12 of whooping-cough, but not one of small-pox. The 995 deaths from all causes in London were 108 below the number in the previous week, and corresponded to an annual death-rate of 11·5 per 1000. The deaths referred to diseases of the respiratory system, which had steadily declined from 469 to 165 in the nine preceding weeks, further fell to 153 in the week under notice, and were 10 below the number registered in the corresponding week of last year.

Of the 4297 deaths from all causes in the 96 towns, 215 resulted from various forms of violence, and 342 were the subject of coroners' inquests, while 1250 occurred in public institutions. The causes of 43, or 1·0 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Sheffield, Leeds, Bristol, Hull, Newcastle-on-Tyne, and in 57 other smaller towns. Of the 43 uncertified causes, 8 were registered in Liverpool, 7 in Gillingham, 5 in Birmingham, 3 in Sunderland, and 2 each in Bootle, St. Helens, Darlington, South Shields, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns, with an aggregate population estimated at 2,345,500 persons at the middle of this year, 1122 births and 704 deaths were registered during the week ended Saturday, June 19th. The annual rate of mortality in these towns, which had been 18·2, 18·9, and 17·9 per 1000 in the three preceding weeks, further declined to 15·7 per 1000 in the week under notice. During the first 11 weeks of the current quarter the mean annual death-rate in these towns averaged 18·5, against a corresponding rate of 15·7 per 1000 in the large English towns. Among the several towns the death-rate last week ranged from 7·0 in Clydebank, 7·6 in Falkirk, and 9·9 in Kilmarnock, to 18·6 in Ayr, 22·5 in Aberdeen, and 29·4 in Perth.

The 704 deaths from all causes were 102 fewer than the number in the previous week, and included 137 which were referred to the principal epidemic diseases, against numbers increasing from 90 to 148 in the four preceding weeks. Of these 137 deaths, 89 resulted from measles, 19 from whooping-cough, 17 from infantile diarrhœal diseases, 7 from diphtheria, and 5 from scarlet fever, but not one from enteric fever or from small-pox. The mean annual death-rate from these diseases was equal to 3·0, against 1·1 per 1000 in the large English towns. The deaths attributed to measles, which had been 72, 85, and 80 in the three preceding weeks, rose to 89 last week, and included 59 in Glasgow, 13 in Aberdeen, and 4 in Leith. The deaths referred to whooping-cough, which had been 43, 40, and 40 in the three perceding weeks, further declined to 19 last week, of which 8 occurred in Glasgow, 5 in Aberdeen, and 2 in Edinburgh. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 15, 10, and 12 in the three preceding weeks, further rose to 17 last week, and included 6 in Glasgow, 4 in Dundee, and 2 in Motherwell. The deaths attributed to diphtheria, which had been 10, 5, and 4 in the three preceding weeks, rose to 7 last week, of which 3 were registered in Glasgow and 2 in Paisley. The fatal cases of scarlet fever, which had been 5, 7, and 12 in the three preceding weeks, fell to 5 last week, and included 2 in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 141, 145, and 126 in the three preceding weeks, further fell to 93 in the week under notice, but were 16 in excess of the number registered in the corresponding week of last year. The deaths from different forms of violence numbered 21, against 35 and 25 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,212,380 persons at the middle of this year, 571 births and 331 deaths were registered during the week ended Saturday, June 19th. The annual rate of mortality in these towns, which had been 16·4, 17·0, and 15·4 per 1000 in the three preceding weeks, further fell to 14·2 per 1000 in the week under notice. During the first 11 weeks of the current quarter the mean annual death-rate in these towns averaged 18·8, against corresponding rates of 15·7 and 18·5 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 16·4 in Dublin (against 11·5 in London and 17·0 in Glasgow), 13·2 in Belfast, 10·2 in Cork, 11·4 in Londonderry, 8·1 in Limerick, and 13·3 in Waterford, while in the 21 smaller towns the mean rate was 15·2 per 1000.

The 331 deaths from all causes were 26 fewer than the number in the previous week, and included 25 which were referred to the principal epidemic diseases, against 27 and 21 in the two preceding weeks. Of these 25 deaths, 7 resulted from infantile diarrhœal diseases, 6 each from measles and whooping-cough, 4 from scarlet fever, and 2 from diphtheria, but not one from enteric fever or from small-pox. The mean annual death-rate from these diseases was equal to 1·1, against corresponding death-rates of 1·1 and 3·0 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 4, 12, and 2 in the three preceding weeks, rose to 7 last week, and comprised 5 in Dublin and 2 in Belfast. The deaths referred to measles, which had been 10, 3, and 7 in the three preceding weeks, were 6 last week, and included 5 in Belfast and 1 in Ballymena. The fatal cases of whooping-cough, which had been 3, 5, and 9 in the three preceding weeks, fell to 6 last week, of which 3 occurred in Dublin. The 4 deaths attributed to scarlet fever were slightly in excess of the average in the earlier weeks of the quarter, and included 2 in Belfast. The 2 fatal cases of diphtheria were registered in Dublin.

The deaths referred to diseases of the respiratory system, which had been 63, 56, and 64 in the three preceding weeks, fell to 57 in the week under notice. Of the 331 deaths from all causes, 103, or 31 per cent., occurred in public institutions, and 8 resulted from different forms of violence. The causes of 13, or 3·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 English towns the proportion of uncertified causes did not exceed 1·0 per cent.

Correspondence.

"Audi alteram partem."

THE POSITION OF THE ARMY CONSULTANTS.

To the Editor of THE LANCET.

SIR,—Questions in Parliament and correspondence in the papers have called attention to the position of the war consultants, whose appointment gave such universal satisfaction. Criticism naturally followed the discovery that those of the Navy had £5000 a year while the Army consultants had only the pay of their rank. No doubt there was a difficulty. While it would be possible to call the President of the Royal College of Physicians "Colonel," to address the President of the Royal College of Surgeons as "Admiral" would be Gilbertian! Pay, not rank, appears to have been the solution. This differential treatment seemed so unfair that it was hoped that the Army consultants would at once have been put on the same footing as their brethren in the Navy; but the tone of the questions in the House suggests a feeling that the pay of their rank is quite sufficient. I sincerely hope that this narrow view will not commend itself to Parliament. To the call of sacrifice in this crisis all willingly respond, and in the most distant parts of the Empire professional men have given up large remunerative practices to join the forces. But it is not fair to entail heavy losses upon a group of men selected for their special abilities. The earning life of a consultant is short—only 10 or 15 years of the "cakes and ale" stage. In a long expensive apprenticeship he gives to the poor from three to six hours a day of gratuitous service, in which he gains an experience of which the community at large reaps the benefit. We have no right to commandeer the brains of such men without a recompense proportionate to their talents and to their obligations. Many of them have fixed charges, domestic and educational, from three to four times in excess of the ordinary pay of a lieutenent-colonel in the army. Some, of course, can afford the sacrifice, but others, though making it willingly, cannot do so without injustice to their families. As absence of a year or two puts a consultant out of touch with his *clientèle*, these men have to face not only an immediate but a prospective loss of income.

Having seen the practice of several of the naval consultants, I can testify that the country is getting worth for its money, not only in the character of the work, but in the stimulus given to the environment in which it is done.

I am, Sir, yours faithfully,

Oxford, June 19th, 1915. WILLIAM OSLER.

THE WAVE-LENGTH OF VERY HARD X RAYS.

To the Editor of THE LANCET.

SIR,—THE LANCET of April 17th contained an article by one of us on the penetrating power of X rays from the Coolidge tube, and the question was raised as to how nearly the X rays may approach in penetrating power that of the hard gamma rays of radium. In this connexion it was stated that the very hard X rays emitted from the tube under a spark-gap of 30 cm.—i.e., about 130,000 volts—had a wave-length about three times that of the shortest gamma rays from radium that had been measured—viz., $0{\cdot}71 \times 10^{-9}$ cm. It was, however, stated that the observations did not preclude the possibility of still more penetrating X rays being produced, but that if harder X rays were present they did not contribute more than about 1 part in 50 to the effects associated with the heavily screened radiation.

At a lecture delivered at the Royal Institution on June 4th, Professor Sir E. Rutherford stated that in conjunction with Professor Barnes and Mr. H. Richardson he had for some time been engaged in an investigation upon the manner in which the wave-length of the X rays generated in the Coolidge tube depended upon the impressed voltage. He said that the hardest X rays which they had been able to produce were just about twice the wave-length of the hardest gamma rays from radium, the surprising fact being that there was only a small increase in the penetrating power of the rays when the voltage was increased from 125,000 to 145,000, and that no appreciable change resulted with a further increase to 175,000. This result refers to the rays of maximum penetrating power, and was obtained by such heavy screening of the beam of the X rays that its intensity was reduced to about one-thousandth part of its initial value.

Professor Rutherford drew attention to the importance which these facts have upon certain physical theories, and expressed the opinion that about 2,000,000 volts would probably be required to produce X rays of the same wave-length as the hardest gamma rays from radium. Considering the authority with which this opinion is invested we may assume that this often-discussed question is now settled and that a practical limit has been set to the hardness of X rays which are likely, at any rate in the near future, to be available for clinical purposes. It is of immediate interest in this connexion to know the proportion that these rays of very short wave-length bear to the whole radiation coming from the tube; from the fact that they were only revealed when very heavy screening was resorted to, it may be inferred that they form a very small percentage of the whole radiation. With an improved yield in the amount of radiation from the Coolidge tube, it remains to be seen whether they will be sufficient in quantity for therapeutic purposes. It may be stated that an approximately homogeneous beam of very hard X rays of wave-length $2{\cdot}1 \times 10^{-9}$ cm. is obtained from the Coolidge tube under a spark-gap of 30 cm. (points), the rays being screened by 7 mm. of aluminium. Such radiation has been in use in the electro-therapeutic department of the Middlesex Hospital during the last two months.

We are, Sir, yours faithfully,

C. R. C. LYSTER,
Middlesex Hospital, W., June 15th, 1915. SIDNEY RUSS.

THE UNIVERSITY OF MELBOURNE: PRACTICAL LOYALTY.

To the Editor of THE LANCET.

SIR,—I am instructed by the Chancellor of the University of Melbourne to state, for the information of your numerous readers, that at a meeting of the teaching staffs of the University and affiliated colleges held on April 21st the following resolutions were passed *nemine contradicente*:—

1. That during the continuance of the war the members of the staff of the University and affiliated colleges pledge

themselves to abstain from the use of alcohol, except under medical advice.

2. That the committee to be appointed at this meeting be requested to consider the question whether a University rifle club can be formed with advantage, and whether any other action can be taken in substitution for such a club, or in addition to it; and, further, that the members of the teaching staff of the University and the affiliated colleges pledge themselves to encourage volunteering among the members of the University by such means as may be approved by the committee to be formed.

3. Though many special services have already been performed by officers of the University at the invitation of Ministers, it is desirable to make it more definitely understood that such services are available, and therefore that the council be asked to approach the Federal and State Governments with the suggestion that the members of the staff of the University would be willing to offer their services, as far as compatible with the continuance of University work, to aid or supplement wherever possible the work of the scientific, technical, or professional branches of the Government departments during the war on any matters connected with Imperial defence in which their assistance may be useful.

4. That this meeting is of opinion that public lectures under the auspices of the University should be given on the subject of the war, its causes, its importance to Australia, and the political and other problems which will arise from it; and that the council be requested to give its support to this course.

5. That the administration of the above resolutions be placed in the hands of a representative committee, with power to appoint special committees.

Concerning the first resolution I am further instructed to state that, whilst every member of the staffs was informed of the meeting, which was in consequence largely attended, no attempt has been made to force the resolution upon those who were unable to attend.

I am, Sir, yours faithfully,
RICHARD J. A. BERRY,
Honorary Secretary, Executive University War Committee.
Melbourne, May 8th, 1915.

THE WAR AND THE MEDICAL PERSONNEL.

To the Editor of THE LANCET.

SIR,—Mr. Tennant's statement in Parliament that at present no more surgeons are needed either at home or abroad gives us time to ascertain the best means of supplying the large number which will be required shortly. In the *Times* "History of the War," No. 41, p. 74, the statement is made that after nine months of war there is still a shortage of 2000 surgeons. This is about the number whose services, according to Mr. Tennant, had been declined. If there was a shortage, why were the offers of 1900 applicants rejected? If there was no shortage, why does the writer of history say there was? The question is, has the writer of history knowledge of facts and reliable figures of which Mr. Tennant is ignorant? The answer is in the negative. For the credit of the profession and of history let it be put on record that there was not a shortage of surgeons after nine months of war; but, even if there were, it was from no lack of offers.

With your permission, I propose briefly to review the present and future situation. A good deal of solicitude has been expressed, by those not conversant with general practice, lest there should be a future shortage of doctors. The truth is that through the passing of the Insurance Act, the same population will not support anything like the same number of medical men; and it would probably be a good thing for the profession and for the public, if no students, of either sex, entered at the schools of medicine for the next five years. In addition most patients will be financially crippled by the war and doctors will be the first to suffer and the last to be paid. In the present situation, it is certain every medical man would offer his services if our wounded wanted him, provided that he had some guarantee that his practice would be safeguarded in his absence. The only thing clear from the various schemes advanced in the interest of the absentee is that there will be a good deal of friction or even litigation on his return.

Now, Sir, the one authority capable of reducing this friction to a minimum is the General Medical Council. The service of the Council would be *pro patria*, and if undertaken would induce quite enough medical men to offer themselves for the succour of our sick and wounded. The expense might well be met by a Government grant.

If the General Medical Council issued a short scheme equitable to the absentee and to the man who carried on the practice, and at the same time agreed to mediate in case of dispute, there would be an ample supply of military surgeons. No other body has the requisite moral force behind it. At present certain reserve battalions of Territorials seem to be short of surgeons, but this is work that can be done by civilian doctors in the districts where the troops are stationed.

The pay of the Territorial surgeon is a strange anomaly. In the past, in many cases, he has given money and much time, with his only reward a good-natured derision. He now gets less than two-thirds the pay of any recently qualified young man who likes to join Kitchener's army. Mr. Harold Baker stated in the House that there is no hardship, since the bargain was made with open eyes. The inference is that the penalty for patriotism is 9*s*. a day. History will do more justice to the Territorial, for it will say he saved Calais, perhaps England.—I am, Sir, yours faithfully,

Formby, June 21st, 1915. ARTHUR C. WILSON.

"MILITARY HONOURS."

To the Editor of THE LANCET.

SIR,—With regard to the letter appearing under this title in your issue of June 12th may I suggest to Mr. W. H. Clayton-Greene that perhaps time might have been saved if instead of giving his certificate to the registrar he had first of all written to the coroner stating the circumstances of the man's death, and at the same time intimating his willingness to give a certificate of death should the coroner approve. By the same post the War Office could be notified of the death and requested to take the funeral in hand. There is a point here, of course, which should not be overlooked, that some coroners prefer all communications to be made through the police or through their own officer. Then, again, it was natural that the coroner should want to know of any relative for the purpose of identification. The War Office then having been apprised that a military funeral had to be provided could have forthwith ordered a coffin from the undertaker, and the latter would begin his work at once, probably the day after death. It would surely also be the duty of the undertaker to arrange all the details of the funeral, including the services of the clergyman and the time and place, and in this connexion he would probably like to consult with the sister mentioned in Mr. Clayton-Greene's letter. Meanwhile the coroner is considering whether he can allow Mr. Clayton-Greene to give a certificate of death in the usual way. He decides yes, and straight away says so. Mr. Clayton-Greene gives his certificate, all for nothing, on the statutory form: the sister, or the nurse who witnessed the death, or the undertaker conveys the same to the registrar of the district or subdistrict. Finally, the registrar makes a copy in his register and also makes a duplicate copy for the undertaker, which is handed to the clergyman at the graveside.—I am, Sir, yours faithfully,

Weston-super-Mare, June 17th, 1915. R. A. EARLE.

"GROWING PAINS" AND RHEUMATISM?

To the Editor of THE LANCET.

SIR,—I think Dr. M. H. Williams, in the interesting paper on Rheumatism in Children appearing in your issue of June 19th, rather overstates the case when she advances the opinion that aching of the legs in children is almost always due to rheumatism —prefacing this remark by stating that by rheumatism she means infection by a specific organism, and following it up by saying that the riddle of treatment is unanswerable. There is no doubt but that her words contain much truth. Dr. Williams, however, makes no mention of what in my opinion is (in this locality at any rate) the commonest cause of "growing pains," and that is the absorption of toxins through adenoid vegetations. It is quite extraordinarily common in my experience to find children with a tendency to fidgets, a constantly raised temperature up to 99·5–100° F., and a muffling of the first cardiac sound in which the whole state can be completely altered by removal of adenoids. I particularly wish to state I do not mean obvious adenoid cases with obstructive signs. Careful examination will almost certainly show a few soft and slightly enlarged cervical glands, but with this exception the signs are general and not local. Treatment by salicylic acid compounds causes no more than a temporary lowering of temperature, and in the cases I have in mind the tuberculin skin tests are negative—both human and bovine.

I have no means of knowing whether the toxin absorbed is that of the specific organism of Poynton and Paine; but if it is, the riddle of treatment can be very readily solved, which is certainly not the experience of most of us with that organism or one closely allied to it.

I am, Sir, yours faithfully,

Chiswick, W., June 21st, 1915. H. O. BUTLER.

THE POSITION OF SURGEONS TO TRANSPORTS.

To the Editor of THE LANCET.

SIR,—Various companies are advertising for ships' surgeons and offering the sum of £15 to £20 per month as salary to those who act in this capacity. One ship was chartered for transport work and the company it belonged to could not procure a surgeon, although they were prepared to offer £500 per annum. Eventually the company arranged with a military medical officer to act as ship's surgeon at the rate of £1 per day. Personally I have "signed on" at the rate of £15 per month, and so, as I am in distant parts, do not see much chance of a remedy. Further, there is, I believe, a war bonus paid by the Admiralty to every member of the crew for war risks; but so far I have been unable to ascertain from this company, a well-known line, whether any proportion is to be awarded to the surgeon.

Besides the important matter of pay, intending surgeons in the Mercantile Marine and passenger ships ought to investigate accommodation provided for them. I berth next to the cook, the barman, and the head waiter in the "slums" of the ship. There is plenty of other work for medical men to do now, and the present is a good opportunity of securing better conditions all round for the doctor in the Mercantile Marine.

I am, Sir, yours faithfully,

June 23rd, 1915. "M."

PROLONGED ANÆSTHESIA.

To the Editor of THE LANCET.

SIR,—Which is the longest period over which an anæsthetic has been known to be given for one operation? I had just recently a case of a man, aged 82, operated upon for malignant growth of the pelvic colon, which took exactly four hours, and therefore the anæsthetic lasted just a few minutes over this time. The patient stood the anæsthetic very well, did not vomit after it, and six hours after the operation was finished he was able to converse with his friends.

The anæsthetic I used throughout the operation was ether, with the exception of a few minutes at the beginning, when chloroform was used. No morphia or atropine was used beforehand, and it is extraordinary that he has not been troubled by any catarrh of the lungs or excess of secretion.

I am, Sir, yours faithfully,

June 19th, 1915. M.B., B.S.

Medical News.

VICTORIA UNIVERSITY OF MANCHESTER.—The following candidates have been approved for the degree of M.D.:—

J. S. B. Stopford (awarded gold medal) and G. C. Mort.

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the committee 28 cases received grants amounting to £294, and two applicants were elected to vacant annuities of £20 each. The following is a summary of the cases relieved:—

Daughter, aged 47, of M.R.C.S. Eng. who practised at Clifton, Bristol. Applicant completely incapacitated owing to complications following operation for hernia. At present in a convalescent home. Lost use of both legs. Prior to illness earned a living by acting as children's nurse. Voted £10 in two instalments.—Daughter, aged 63, of L.R.C.S. Glasg. who practised at Liverpool. For a number of years acted as matron to a private mental home, but has not been able to save. A younger matron is now required, and applicant must try to obtain other work and finds it difficult at her age. Voted £12 in 12 instalments and referred to the Guild.—Widow, aged 34, of L.S.A. Lond. who died in January of this year, and had acted as locum-tenent in various places. Left the applicant totally unprovided for with three children ages 12 to 17 years. Hopes to obtain some employment. Voted £10 in two instalments.—Widow, aged 73, of L.S.A. Lond. who practised at Bermondsey, and died in 1887. Until the outbreak of war was able to make a living by taking in boarders at her house on the South Coast. All the August and autumn bookings last year were cancelled, and has had to close up the house temporarily. Lives in own house, which is heavily mortgaged. Voted £15.—M.R.C.S. Eng., aged 58, who had practised in the Midlands, and now suffering from total paralysis of the right side and unable to speak or write. Only income a pension of £30 per annum, and a little from the sale of his practice. His wife has to devote all her attention to him, and the three children are unable to help financially. Voted £2, and referred to the Guild for report.—Widow, aged 70, of M.D. St. And. who practised in Pall Mall, S.W., but was incapacitated for some years before death in May of this year, and was a pensioner of the Fund, and received assistance from another charity. Applicant left entirely unprovided for. Voted £2, and referred to the Guild for report.—Daughter, aged 66, of M.R.C.S. Eng. who practised in London. Has earned a living as a teacher of languages, but cannot obtain pupils at present. Lives with two sisters, who try to earn a living by keeping a boarding-house, but not successfully. One of the sisters also receiving a grant from the Fund. Voted £12 in 12 instalments and referred to the Guild for report.—Widow, aged 54, of M.R.C.S. Eng. who died in 1897 and practised at Stockton-on-Tees. Left totally unprovided for with two young children to educate and keep. Has earned a little by needlework and has acted as caretaker. Eyesight now very bad. Daughter now earning a little and son has joined the army. Previous help 11 times, £97. Voted £9 in 12 instalments.—M.R.C.S. Eng., aged 48, who practised at Aysgarth, and as surgeon to a steamship company, which took him abroad, where he contracted sunstroke with very bad effects, and is now totally incapable of doing anything. Lives with an aunt who has barely sufficient for her own needs. Previous help £10. Voted £10 in two instalments.—Widow, aged 52, of L.R.C.P. & S. Edin. who practised at New Quay. Health very indifferent and has recently had an accident which has incapacitated her from doing any work. Has two sons, sailors, but they are only able to help very slightly. Relieved 12 times, £125. Voted £12 in 12 instalments.—Widow, aged 69, of M.R.C.S. Eng. and L.S.A. Lond. who died in 1887, and practised at Heathfield, Sussex. Used to earn a bare living by taking in boarders, but is now suffering from rheumatoid arthritis, and has had to give up her home, and is now in a home for gentlewomen, but requires money for food. Previous help seven times, £75. Voted £12 in 12 instalments.—Widow, aged 57, of M.R.C.S. Eng. who practised at Enfield, and died in 1905. Applicant has indifferent health and daughter is suffering from spinal diseases. Only income a little help from friends. Relieved four times, £40. Voted £5.—M.D. Aberd., aged 62, who practised at Walsall Suffering from rheumatoid arthritis since 1881. Has four children ages 4 to 16 years. Has three small pensions from other charities. Previous help seven times, £63. Voted £12 in 12 instalments.—Daughter, aged 60, of L.F.P.S. Glasg. who practised at Mauchline. Health very bad and unable to undertake any definite work. Only certain income a pension from another charity of £12 per annum. Relieved eight times, £80. Voted £12 in 12 instalments.—Widow, aged 50, of L.R.C.P. & S. Edin. who practised in Jamaica. At husband's death in 1891 was left with three daughters and totally unprovided for. Health has been very bad, and applicant has just been elected an out-patient pensioner of a home for incurables. Lives with married daughter, who cannot afford to keep her. Relieved seven times, £84. Voted £12 in 12 instalments.—Widow, aged 63, of M.D. Glasg., who died in 1908 and practised at Glasgow. Applicant has tried to make a living by taking in boarders, but latterly has not been successful, and sister who helped in the house is now bedridden with paralysis. Relieved once, £12. Voted £12 in 12 instalments.—Widow, aged 49, of L.S.A. Lond. who practised at Leicester and died in 1910. Applicant was left with four children, whose ages are now 11–21. The two eldest daughters are clerks and pay over their wages to their mother, but this is not sufficient to keep the house. The applicant tries to supplement her income by doing a little needlework. Relieved three times, £34. Voted £12 in 12 instalments.—Daughter, aged 76, of M.R.C.S. Eng. who practised at Hackney. Owing to great age the applicant is unable to undertake any work. Three brothers who used to help her have recently died. Only income £33 per annum. Relieved three times £36. Voted £15 in 12 instalments.—Widow, aged 66, of L.S.A. Lond. who practised at Ipswich. Since the death of her husband in 1901 has endeavoured to make a living by letting apartments, but not very successfully. Children only able to help very little. Relieved 13 times, £140. Voted £12 in 12 instalments.—Daughter, aged 51, of M.R.C.S. Eng. who practised at Box, Wilts. Applicant is a permanent invalid and unable to work. Lives with sister who earns a little and has a grant from the Fund. Relieved three times, £36. Voted £12 in 12 instalments.—Daughter, aged 47, of M.R.C.S. Eng. who practised in India. Has endeavoured to earn a living by taking in boarders, but cannot make ends meet. Has just removed into the country and pays less rent, and hopes in the future to manage without troubling the Fund. Relieved four times, £42. Voted £12 in 12 instalments.—Widow, aged 44, of L.R.C.P. & S. Edin. who practised in South Wales and died in 1903. Left unprovided for at husband's death with two daughters, the eldest of whom is studying as a teacher of domestic economy and hopes to earn a little soon. Applicant earns a little as a maternity nurse Relieved nine times, £65. Voted £5.—Widow, aged 35, of M.R.C.S. Eng. who practised at Bow, E., and died in 1912. Applicant has one child, and being a nurse by profession endeavours to make a living by taking in mental cases in her house in the suburbs, but finds it difficult to make ends meet. Wants assistance towards the education of her son. The case was referred to the Guild, and a certain sum allocated subject to the report being satisfactory.—Widow, aged 60, of M.D. Glasg. who practised at Birkenhead and other places. Left unprovided for at husband's death. Three daughters, ages 31–33 years. The two eldest earning a little, but the youngest is a confirmed invalid. Applicant suffering from neuritis. Relieved six times, £96. Voted £6 in 12 instalments.—Daughters, ages 48 and 56, of M.D. Aberd. who practised in Yorkshire. Both are unable to work owing to illness. Only income £20 each per annum. Relieved twice, £20. Voted an immediate grant of £1, and referred to the Guild for report.—Daughter, aged 60, of M.D. Edin. who practised in London. Health very indifferent, and only income about £4 per annum from needlework. Lives with a sister who is an invalid. Relieved seven times, £49. Voted £12 in 12 instalments.—Widow, aged 59, of L.R.C.P. & S. Edin. who practised at Balham, and died in 1913. Lives in own house and takes in boarders when she can get them, but cannot get sufficient to make it pay. Relieved twice, £14. Voted £12 in 12 instalments.—Daughter, aged 67, of M.R.C.S. Eng. who practised in Lancashire. In consequence of ill-health and age unable to work. Only income £30 per annum from another charity, and has just been elected to an unfurnished home. Wants help for furnishing. The Liverpool Branch of the Guild are assisting. Relieved four times, £60. Voted £10 at the direction of the Guild at Liverpool.

The claims of the Fund are steadily increasing, largely in consequence of the war, and though the ordinary subscriptions remain at much the same level, there is a constantly increasing adverse balance. At the last meeting the committee was faced with an overdrawn account of £92, which was increased by the £294 then spent in grants to a total deficit of £386. To meet this the committee has had to draw upon its limited reserves, and unless support be rapidly forthcoming its work will have to be curtailed. Subscriptions may be sent to the honorary treasurer, Dr. Samuel West, 11, Chandos-street, Cavendish-square, London, W.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on June 17th, with Sir Francis H. Champneys in the chair. A letter was considered from the town clerk of Southend-on-Sea asking the Board for suggestions as to a method by which the disability experienced by lying-in women in obtaining medical aid in response to requests made by certified midwives under the rules of the Board may be dealt with. The Board directed that the town clerk be informed that the Board has ever since its establishment urged the Privy Council to promote legislation for dealing with the question of the payment of medical practitioners called in at the instance of midwives in accordance with the rules of the Central Midwives Board; as the Board's opinion has been asked they may say that they think that if the guardians could see their way to pay the prescribed fees to the practitioner duly called in in the first instance and to recover the fees from the patient where the patient is able to pay, it would greatly conduce to the welfare of the poor mothers of the community. A letter was considered from the medical officer of health of Chester asking the Board's opinion as to the propriety of a midwife recommending hand-feeding. The Board directed that the medical officer be informed that the question as put is too vague to admit of a definite reply. If such a reply is desired particulars will have to be furnished in a definite case or in definite cases.

The following letter was read from the honorary secretary of the Midwives Institute as to the decision of the High Court in the case of a Midwife *v.* Central Midwives Board:—"The Midwives Institute has noted with great regret the reversal by the High Court of the decision of the Central Midwives Board in the case of a midwife who was struck off the roll. We understand that the charge was one of immorality, and that the reversal of the Board's decision was made in consequence of some technical omission. The Midwives Institute feels that the result of this case is liable to very serious misconstruction by the general public. I have therefore been requested to forward to your Board the following resolution: 'The Midwives Institute respectfully ask the Central Midwives Board to make a pronouncement, which can be reported in the press, that in spite of the High Court's reversal of the Central Midwives Board's decision in a recent case the Board will, as it has heretofore done, continue to support the *moral* as well as the *professional* status of practising midwives.'" The Board decided that the honorary secretary of the Midwives Institute be informed that the decision of the High Court in the case of a Midwife *v.* Central Midwives Board, although reversing the decision of the Central Midwives Board to remove the name of the midwife from the roll, confirms the Board in their position as the authority which determined what is and what is not misconduct in a midwife, and decided that misconduct is not to be limited to misconduct in a professional sense; the Board has held that conduct which, before enrolment would render it impossible to certify that a candidate was "of good moral character" renders her, after enrolment, liable to be removed from the roll for "misconduct."

DEATH OF A SHEFFIELD MEDICAL MAN.—Mr. Herbert Leonard Hudson, L.R.C.P. Irel., died at his residence in Sheffield on June 11th in his fifty-eighth year. He was born in Calcutta and at an early age came to England with his parents, who settled in Hull. About the year 1887 he began medical practice in Sheffield, where he became popular with all classes. He leaves a widow, a son who is studying medicine at Sheffield University, and a married daughter.

WESTERN COUNTIES INSTITUTION FOR MENTAL DEFECTIVES.—At the annual meeting of the subscribers to the Western Counties Institution, held recently at Starcross, under the presidency of the Earl of Devon, it was stated that during the 50 years the institution had been in existence 1451 children had been admitted. The first annual report showed that 12 children were admitted at an expenditure of £965. Last year 347 cases were treated, the daily average number being 303, and the annual expenditure was £11,077.

THE HERITAGE COLONY.—H.R.H. Princess Louise, Duchess of Argyll, will inspect the military wards named after her at the Heritage Colony for Boys at Chailey on Thursday next, July 1st.

BRITISH SYMPATHY WITH ITALY.—The British residents and visitors in Rome propose that their sympathy with their gallant ally, Italy, should take the form of assistance to the wounded Italian soldiers by the provision of complete equipment for one or more wards, according to the funds raised, in one of the hospitals which are now being prepared. The Medical Inspector-General, Lieutenant-General Luigi Ferrero di Cavallerleone, has signified his cordial approval of this suggestion, and will be happy to reserve a special ward, or wards, to be equipped by British aid. Subscriptions, however small, will be gratefully received by Dr. George Sandison Brock, M.D., 6, Corso d'Italia, Rome, who will also gladly undertake the application of the sum collected to its intended purpose. If not sent to him personally subscriptions should be addressed to Mr. E. J. Wallman, care of Messrs. Cook and Son, 54, Piazza Termini, Rome, who will duly acknowledge their receipt.

MEDICINE AND THE CIVIL LIST.—Among the Civil List pensions granted during the year ended March 31st, 1915, are one of £80 to Mrs. J. E. Baker, in consideration of the services of her husband, the late Dr. Hugh Baker, in the investigation and treatment of sleeping sickness in Africa; one of £60 to Mrs. Constance Emily Burch, in consideration of the value of the researches of her husband, the late Dr. George James Burch, F.R.S., in physics and physiology; one of £50 each to Mr. William Grenfell Wallace, and Miss Violet Wallace, in consideration of the scientific work of their father, the late Dr. Alfred Russel Wallace, O.M.; and one of £150 to Dr. Charlton Bastian, F.R.S., in consideration of his services to science.

THE LATE DR. JAMES STEWART ORCHARD.—The death of Dr. James S. Orchard took place at his residence, West Didsbury, Manchester, on June 18th. Up to the end of 1914 he was the medical superintendent of the Withington Hospital, Manchester, a position which he had held since 1879. Dr. Orchard was at one time medical officer of the Salford Union Infirmary.

THE COLONIAL NURSING ASSOCIATION.—The nineteenth annual report of the executive committee of this association for the year ending March 31st, 1915, has just been issued. The object of the association is to provide trained nurses for hospital and private work in the British colonies and dependencies, and among other British communities abroad, and in this work there has been a steady advance during the year under notice. Although the outbreak of war has very considerably increased the difficulties of filling colonial posts, the number of nurses at work during the past year has been 338, this being in excess of any previous year. Of this number, 93 have been employed as private nurses, 17 in hospitals not under Government, 21 under the Government of Western Australia, and 207 in Government service in the Crown colonies.

ROYAL VICTORIA INFIRMARY, NEWCASTLE-ON-TYNE.—The quarterly court of governors of this institution was held on June 17th under the chairmanship of Alderman W. J. Sanderson. The financial statement showed that the total expenditure for the four months ending April 30th, including extraordinary expenditure, was £15,043, while the total income, including legacies, was £13,533. Since the outbreak of the war 2300 sick and wounded soldiers have been treated in the wards of the Royal Victoria Infirmary, and in the out-patient department more than 30,000 applicants have been inoculated against typhoid.

PRESENTATION OF THE LONG SERVICE MEDAL TO MAJOR JAMES PHILIP STEPHENS WARD, R.A.M.C. (T.).—At the Plymouth Citadel on June 13th Major Ward, who is attached to the Devon Royal Garrison Artillery, was presented with the long service medal by Major-General A. P. Penton, C.V.O., C.B., Garrison Commander.

THE Lecomte triennial prize, £2000 in value, has been awarded by the Paris Académie des Sciences to Sir Almroth Wright.

MR. A. H. Tubby has been elected an Honorary Member with medal of the First Class of the Società Fisico-Chimica Italiana.

A MEDICAL BARRISTER.—Mr. J. Beard, medical officer of health of the city of Carlisle, has been called to the Bar at Gray's Inn.

The War.

THE CASUALTY LIST.

SINCE our last issue the following names of medical men are in the lists of those who have fallen in the war from wounds or gas-poisoning:—

Died of Wounds: Major J. C. Taylor, R.A.M.C. (T.F.), attached 4th Battalion Royal Scots Fusiliers (T.F.).

Lieutenant E. A. Wright, R.A.M.C. (only son of Mr. A. Wright, M.R.C.S., L.S.A., of Romford), from septic poisoning contracted in attending on patients.

Wounded: Lieutenant W. J. Maloney, attached 4th Worcester Regiment, Major O. R. Ennion, East Anglian Field Ambulance (T.F.), Captain C. C. Fitzgerald, attached 7th Lancashire Fusiliers (T.F.), Lieutenant D. Bell, and Lieutenant G. S. Deane (*gas-poisoning*), all of the R.A.M.C.; Lieutenant H. M. Gauntlett, attached 4th Oxford and Bucks Light Infantry, Lieutenant W. W. Adamson, 2nd West Riding Field Ambulance, both of R.A.M.C. (T.F.).

Prisoner: Lieutenant J. M. Gillespie, R.A.M.C. (previously reported missing).

DEATHS AMONG THE SONS OF MEDICAL MEN.

The following have to be added to the sons of medical men who have fallen in the war:—Second Lieutenant W. P. Heffernan, second son of Mr. W. K. Heffernan, L.R.C.P. & S. Irel., J.P., of Killenaule; Second Lieutenant G. M. Hume, third son of Dr. G. H. Hume, late of Newcastle-on-Tyne; Lieutenant W. H. Fox, elder son of Dr. G. M. Fox, of Walsall; Lieutenant C. C. A. Ratcliff-Gaylard, elder son of Dr. J. Ratcliff-Gaylard, of Birkenhead.

Flight Sub-Lieutenant Warneford, V.C., may also be included here, for he was the son of Mrs. Corkery, wife of Lieut.-Colonel Corkery, R.A.M.C.

MENTIONED IN DESPATCHES.

The following officers connected with the medical profession and occupying the indicated positions with our army are recommended in Sir John French's despatch, dated May 31st and issued from the War Office this week, "for gallant and distinguished service in the field." Alas, several of them are no longer with us.

General Headquarters Staff, &c.

Atkins, Col. (temp.) J.
Beveridge, Lt.-Col. W. W. O., D.S.O., R.A.M.C.
Birrell, Lt.-Col. E. T. F., C.M.G., R.A.M.C.
Brackenridge, Lt.-Col. F. J., R.A.M.C.
Burtchaell, Col. C. H., C.M.G.
Carr, Col. H.
Chopping, Lt.-Col. A., R.A.M.C.
Cummins, Lt.-Col. S. L., R.A.M.C.
Davidson, Maj. P., D.S.O., R.A.M.C.
Dwyer, Capt. P., R.A.M.C.
Easton, Maj. P. G., R.A.M.C.
Ensor, Lt.-Col. H., D.S.O., R.A.M.C.
Evans, Lt.-Col. P., R.A.M.C.
Fawcus, Lt.-Col. H. B., R.A.M.C,
Fell, Lt.-Col. M. H. G., R.A.M.C.
Ferguson, Col. N. C., C.M.G., R.A.M.C.
Forrest, Lt.-Col. J. V., R.A.M.C.
Geddes, Col. R. J., D.S.O.
Irvine, Maj. F. S., R.A.M.C.
Macpherson, Surg. Gen. W. G., C.B., C.M.G.
Morgan, Lt.-Col. C. K., R.A.M.C.
O'Donnell, Surg.-Gen. T. J., D.S.O.
Penny, Lt.-Col. F. S., R.A.M.C.
Porter, Surg.-Gen. R.
Ritchie, Capt. M. B. H., R.A.M.C.
Swan, Col. W. T.
Treherne, Surg.-Gen. F. H., C.M.G.
Webb, Lt.-Col., A. L. A., R.A.M.C.
Anderson, Surg.-Lt. E. D., 1st Life Guards.
Luxmore, Surg.-Capt. E. J. H., 2nd Life Guards.
Pares, Surg.-Maj. B., Royal Horse Guards.

Medical Service and R.A.M.C.

Bowlby, Col. (temp.) Sir A. A., K.C.M.G.
Burghard, Col. (temp.) F. F.
Dawson, Col. (temp.) Sir B. E., K.C.V.O.
Gray, Col. (temp.) H. M. W.
Herringham, Col. (temp.) Sir W. P.
Lister, Col. (temp.) W. T.
Meek, Col. J.
Makins, Col. (temp.) Sir G. H., K.C.M G., C.B.
Moynihan, Col. (temp.) Sir B. G. A.
Wright, Col. (temp.) Sir A. E.
Young, Col. C. A
Ainsworth, Maj. R. B

Bartlett, Maj. B. S.
Bell, Capt. W. J. E.
Bond, Capt. A H.
Bostock, Maj. J. S.
Boyce, Capt W. W.
Boyle, Lt.-Col. M.
Brown, Maj. R. T.
Browne, Capt. C. G.
Burney, Capt. W. H. S.
Burnham, Maj. H. H. (attd. 2nd Canadian Artillery Brig.)
Cagney, Lt. (temp.) P.
Cairns, Lt. J. W. (T.F.)
Cannon, Lt. J. W., (S.R.)
Carter, Capt. H. St. M.
Chesney, Lt W. McM. (S.R.)
Clarke, Lt. T. W. (S.R.)
Coplans, Capt. M. (T.F.)
Cowey, Maj. R. V.
Craig, Lt. D. D.
Crawford, Lt.-Col. G. S.
Crean, Capt. T. J., V.C. (Res. of Off.)
Cree, Lt. (temp.) R. E.
Dalrymple, Capt. (temp.) J.
Darling, Capt. W.
Dawson, Capt. G. F.
Devonald, Lt. A. E. L. (T.F.).
Duka, Capt. (temp.) A. T., D.S.O.
Fielding, Maj. T. E.
Foster, Capt. J. R.
Franklin, Maj. R. J.
Gale, Capt. R.
Galloway, Lt. (temp.) R. W.
Gilchrist, Lt. A. J. (S.R.)
Glynn, Lt. (temp.) A. S.
Goddard, Maj. C. E. (T.F.)
Harding, Maj. D. L.
Hart, Lt. (temp.) C. H.
Haycraft, Lt. (temp.) J. B.
Herrick, Lt.-Col. H.
Hewson, Capt. F. M.
Hill, Lt. (temp.) F. T.
Hincks, Lt. A. C. (T.F.).
Houston, Capt. J. W.
Howell, Capt. F. D. G.
Howell, Capt. H. L.
Ingram, Lt. (temp.) T. L.
Irvine, Capt. A. E. S.
James, Lt. (temp.) P. W.
Janion, Lt. (temp.) H. G.
Jones, Capt. J. B.
Just, Lt. (temp.) T. H.
Kavanagh, Capt. E. J.
Kelly, Lt.-Col. J. F. M.
Lane, Capt. J. W.
Langstaff, Lt.-Col. J. W.
Le Bas, Lt. (temp.) D.
L'Estrange, Maj. E. F. Q.
Lightstone, Lt. H. (T.F.).
Lindsay, Lt. A. B.

Lister, Lt. (temp.) W. H.
Lloyd-Jones, Capt. P. A.
Lovell, Lt. A. G. H.
McCarthy, Capt. W. H. L. (S.R).
McCurry, Lt. W. T. (S.R.) (killed).
Macglashan, Capt. K B. (S.R.).
Mackie, Lt. D. (S.R.).
McLaughlin, Capt. J. N. (S.R.).
Maclean, Lt. (temp.) I. C.
McLean, Lt. W. F. (S.R.).
McSheehy, Capt. O. W.
Martin, Maj. J. F.
Martyn, Capt. S. (T.F.).
Miller, Lt. W. A. (S.R.).
Moore, Lt. (temp.) E. H., D.S.O.
Morris, Lt. E. M. (T.F.).
O'Brien, Capt. C. W.
Page, Capt C. M. (S.R.).
Pallant, Maj. S. L.
Pemberton, Lt. H. S. (S.R.).
Poe, Lt.-Col. J.
Preston, Lt. R. A.
Priestley, Lt. J. G.
Richards, Maj. F. G. (killed).
Richards, Capt. (temp.) O.
Robinson, Capt. T. T. H.
Rogers, Maj. H.
Rogers-Tilstone, Lt.-Col. J. M. (T.F.).
Sargent, Hon. Lt.-Col. (temp.) P.
Seelley, Lt. (temp.) E.
Shaw, Capt J. J. McI.
Slavter, Lt.-Col. E. W.
Smith, Lt. (temp.) A. C. S.
Smith, Lt. (temp.) P.
Somervell, Lt. L. C.
Stirling, Capt. A. D.
Stubbs, Capt. J. W. C.
Symons, Lt.-Col. F. A., D.S.O.
Thorne, Lt. (temp.) F. J.
Thurston, Lt.-Col. H. S.
Trist, Capt. J. R. R. (S.R.)
Turnbull, Lt. (temp.) D. C. (died of wounds).
Turner, Capt. C. H.
Vellacott, Capt. H. F. (S.R.).
Wear, Lt.-Col. A. E. L.
Webb, Lt.-Col. A. L. A.
Wedd, Lt. B. H.
Wells, Capt. A. G.
West, Maj. J. W.
Whitehead, Capt. N. T.
Wilkinson, Lt. (temp.) R F.
Wilson, Lt. (temp.) C. McM.
Winter, Capt. H. G.
Woolfenden, Lt. (temp.) H. F.
Wood, Capt. J. L.
Woodhouse, Lt (temp.) P. R.
Worthington, Maj. Sir E. S., Knt., M.V.O.
Worthington, Capt. F.
Wylie, Lt. T. W. (S.R.)

Royal Army Medical Corps (T.F.).

Bickerton, Capt. R. E., 84th Field Amb.
Bird, Maj. E. B., 26th Field Amb.
Blackwood, Capt. W., 25th Field Amb.
Burgess, Lt. R., 24th Field Amb.
Cameron, Lt.-Col. D. A., 86th Field Amb.
Fairbank, Capt. H. A. T., 85th Field Amb.
Fisher, Maj. D. L., 86th Field Amb.

Harrison, Capt. W. J. (attd. 6th Northd. Fus.)
Mackay, Maj. W. B. (attd. 7th Northd. Fus.).
Sharpe, Lt.-Col. W. S., 84th Field Amb.
Sprawson, Capt. E. C., 3rd Divn.
Waggett, Maj. E. B., 85th Field Amb.
Wardle, Lt. V. H., 86th Field Amb.
Whait, Lt.-Col. J. R., 85th Field Amb.

British Red Cross Society.

Fox, Dr. G. R.
Struthers, Dr. J. W.

Australian Army Medical Corps.

Eames, Lt.-Col. (temp.) W. L'E., C.B.

Staff, 1st Canadian Division.

Foster, Lt.-Col. (temp. Col.) G. La F., C.A.M.C.
Chisholm, Capt. (temp. Maj.) H. A., C.A.M.C.

Canadian Army Medical Corps.

Ford, Lt.-Col. F. S. L.
McPherson, Lt.-Col. D. W.
Ross, Lt.-Col. A. E.
Shillington, Lt.-Col. A. T.
Watt, Lt.-Col. W. L.
Duval, Maj. J. L.
Hardy, Maj. E. B.
Bell, Capt. F. C.
Brown, Capt. G. P.

Donaldson, Capt. A. S.
Fraser, Capt. J. J.
McGibbon, Capt. R. H.
McKillip, Capt. T. H.
McQueen, Capt. J. D.
Stone, Capt. E. L.
Haywood, Lt. A. K. (attached 3rd Canadian Batt.).

Indian Medical Service.

Anderson, Lt. F. J., 111th Indian Field Amb.
Atal, Maj. P. P. (killed).
Bamfield, Lt.-Col. H. J. K.
Barron, Maj. R. M., 113th Indian Field Amb.
Boulton, Maj. H., D.A.D.M.S., Meerut Divn.

Bowle-Evans, Lt.-Col. C. H., Lucknow Casualty Clearing Stn.
Gow, Lt. P. F.
Hime, Lt.-Col. H. C. R., R.A.M.C. (attd.).
Melhuish, Maj. H. M. H., 112th Indian Field Amb.
Needham, Maj. R. A.

Odlum, Maj. W. H., 112th Indian Field Amb.
O'Neill, Capt. J. S.
Ozzard, Lt.-Col F. R.
Rai, Capt. D. H. (attd. 6th Jats).
Reinhold, Capt. C. H., 111th Indian Field Amb.

Sheppard, Capt. A. L.
Taylor, Capt. John (attd. 1/39th Garhwal Rif.).
Trafford, Maj. W. L.
Wall, Lt.-Col. F.
White, Lt.-Col. W. W., 128th Indian Field Amb.

Indian Subordinate Medical Department.

Macqueen, Sen. Asst. Surg. and Hon Lt. K. G. S.
Holmes, 1st Cl. Asst. Surg. J. A. H.
Maine, 1st Cl. Assist. Surg. W. J. S.
Rodgers, 2nd Cl. Asst. Surg. M. C. R.
Bouche, 3rd Cl. Asst. Surg. B. J.
Cummins, 3rd Cl. Asst. Surg. A.W.
Fox, 3rd Cl. Asst. Surg. H. A.
Fraser, 3rd Cl. Assist. Surg. A. G. L.
D'Arcy, 4th Cl. Assist. Surg. A. F. J.
Hill, 4th Cl. Assist. Surg. E. R.
Perkins, 4th Cl. Assist. Surg. J. W.

Gauri Shankar, 1st Cl. Sen. Sub-Asst. Surg.
Jesudasan, S., 1286 1st Cl. Sub-Asst. Surg. S.
Lachhmann Das, 829 1st Cl. Sub-Asst.-Surg.
Muhammad Raza Khan, 903 1st Cl. Sub-Asst. Surg.
Narayan-parshad Sukul, 997 1st Cl. Sub-Assist. Surg.
Salagram, 933 1st Cl. Sub-Asst. Surg.
Ganpat Kanoji Rao Rane, 379 3rd Cl. Sub-Asst. Surg.
Raj Singh, 1362 3rd Cl. Sub-Asst. Surg.
Upendra Kumar Ganguli, 1333 3rd Cl. Sub-Asst. Surg.

Indian Army.

Ramkrishna, Ganpat Shinde, 2nd Class Sub-Assist. Surg., 1st Batt. 39th Garhwal Rifles.
Cormack, Lt. H. S., I.M.S., 47th Sikhs.

THE HONOURS LIST.

Following Sir John French's despatch, dated May 31st, and the above list of names brought forward by the Commander-in-Chief, the King has approved of a long list of rewards for "services rendered in connexion with operations in the field." The following are the medical officers promoted or appointed to Orders:—

General Headquarters Staff, &c.

Brevet-Colonels.—Lieut.-Col. M. H. G. Fell and Lieut.-Col. H. Ensor.

C.B.—Lieut.-Col. W. W. O. Beveridge, D.S.O., Col. H. Carr, Col. R. J. Geddes, D.S.O., and Col. W. T. Swan.

C.M.G.—Lieut.-Col. S. L. Cummins, Lieut.-Col. P. Evans, Lieut.-Col. H. B. Fawcus, and Lieut.-Col. A. L. A. Webb.

D.S.O.—Major F. S. Irvine and Surg.-Major B. Pares.

Military Cross.—Capt. P. Dwyer.

Medical Service and R.A.M.C.

Brevet Lieut.-Colonel.—Major J. S. Bostock.

C.B.—Col. (temp.) F. F. Burghard, Col. (temp.) Sir W. P. Herringham, Col. J. Meek, Col. S. G. Moores, Col. S. Westcott, C.M.G., and Col. (temp.) Sir A. E. Wright.

C.M.G.—Lt.-Col. G. S. Crawford, Lt.-Col. T. H. J. C. Goodwin, D.S.O., Major J. F. Martin, Lt.-Col. J. C. B. Statham, Lt.-Col. H. S. Thurston, Lt.-Col. A. E. L. Wear, and Major Sir E. S. Worthington, M.V.O.

D.S.O.—Capt. C. G. Browne, Capt. H. St. M. Carter, Major R. V. Cowey, Capt. T. J. Crean, V.C., Major T. E. Fielding, Capt. R. Gale, Capt. P. A. Lloyd-Jones, Capt. O. W. McSheehy, Lieut.-Col. J. Poe, and Capt. (temp.) O. Richards.

Military Cross.—Lieut. W. McM. Chesney, Lieut. D. D. Craig, Capt. W. Darling, Capt. G. F. Dawson, Lieut. (temp.) F. T. Hill, Capt. H. L. Howell, Lieut. (temp.) P. W. James, Lieut. (temp.) H. G. Janion, Capt. J. B. Jones, Capt. E. J. Kavanagh, Lieut. (temp.) W. H. Lister, Lieut. (temp.) I. C. Maclean, Lieut. R. A. Preston, Lieut. (temp.) P. Smith, Capt. J. W. C. Stubbs, Capt. H. F. Vellacott, Capt. N. T. Whitehead, and Capt. H. G. Winter.

Staff, 1st Canadian Division.

C.B.—Lieut.-Col. (temp. Col.) G. La F. Foster.

D.S.O.—Capt. (temp. Major) H. A. Chisholm.

Canadian Army Medical Corps.

C.M.G.—Lieut.-Col. F. S. L. Ford.

D.S.O.—Capt. T. H. McKillip.

Military Cross.—Lieut. A. K. Haywood.

Indian Medical Service.

C.M.G.—Lieut.-Col, C. H. Bowle-Evans and Lieut.-Col. F. Wall.

D.S.O.—Capt. John Taylor.

Military Cross.—Capt. J. S. O'Neill and Second-class Sub-Asst. Surg. Ramkrishna Ganpat Shinde.

Brevet-Colonel.—Lieut.-Col. W. W. White.

THE VICTORIA CROSS.

The Victoria Cross has been awarded to Captain F. A. C. Scrimger, Canadian Army Medical Service, Medical Officer, 14th Battalion, Royal Montreal Regiment, for directing, on April 25th, near Ypres, under heavy fire, the removal of the wounded and himself carrying a severely wounded officer out of a stable to a place of greater safety, and remaining with him under fire till help could be obtained. During the very heavy fighting between April 22nd and 25th Captain Scrimger displayed continuously day and night the greatest devotion to duty among the wounded at the front.

COMPENSATIONS AND PENSIONS FOR MILITARY MEDICAL OFFICERS.

We stated last week, in response to many inquiries, that the compensation for injury and pensions for widows and children and other compassionate allowances during the present war were the same for Special Reserve, Territorial, and temporarily commissioned officers as for permanent officers of the Royal Army Medical Corps. We now put them before our readers in tabular form:—

Pensions and Gratuities to Wounded Officers (under the rank of Colonel) of the Regular Army, the Special Reserve of Officers, and the Territorial Force, and to Officers holding only Temporary Commissions for the Purposes of the Present War.

—	Wounds and injuries received in action or on flying duty.		Wounds and injuries received on duty otherwise than in action or on flying duty.	
Rank of officer (i.e., permanent rank unless the officer holds only temporary rank).	1 Gratuity for "very severe" injury, to be followed by pension (col. 2) if effects are permanent.	2 Pension for "very severe and permanent" injury following gratuity (col. 1).	3 Gratuity for "severe and and permanent" injury (no pension).	4 Pension for "very serious and permanent" injury (no gratuity).
	*	†	*	†
Lieutenant-Colonel ...	From £112 10*s.* to £450.	From £150 to £300 a year.	From £112 10*s.* to £450.	From £120 to £250 a year.
Major... ...	From £75 to £300.	From £100 to £200 a year.	From £75 to £300.	From £80 to £150 a year.
Captain ...	From £52 10*s.* to £250.	From £50 to £100 a year.	From £62 10*s.* to £250.	From £40 to £75 a year.
Lieutenant	From £35 to £140.	From £35 to £70 a year.	From £35 to £140.	From £30 to £50 a year.
Second Lieutenant	From £25 to £100.	From £35 to £70 a year.	From £25 to £100.	From £30 to £50 a year.

* The amount of gratuity depends upon the period for which the officer is disabled by his wound or injury for the performance of military duty.

† The rate of pension is governed by the degree of severity of the wound or injury.

Artificial appliances are supplied at the public expense to officers who have lost a limb, an eye, &c., through wounds or injuries received *in action or on flying duty.*

Pensions on Cessation of Service to Officers (as above) Disabled by Wounds, Injuries, or Disease Received or Contracted on War Service.

Officers medically certified to be disabled either wholly or partially for earning a livelihood on the cessation of their service through wounds, injuries, or disease received or contracted on war service may be granted pensions varying from 3*s.* a day to £200 a year according to circumstances. Such pension is additional to any wound pension or gratuity for which an officer may be eligible. (Officers of the Regular Army may be eligible for higher rates under the provisions of the Pay Warrant.)

Applications for wound pensions, &c., should be addressed to the Secretary, War Office, Whitehall, S.W.

Pensions to the Families of Officers (under the Rank of Colonel) of the Regular Army, the Special Reserve of Officers, and the Territorial Force, and to the Families of Officers holding only Temporary Commissions for the Purposes of the Present War.

Widows and children.	*Class A.* Families of officers killed in action or dying of wounds received in action within seven years after having been wounded.				*Class B.* Families of officers dying from disease caused by fatigue, privation, or exposure incident to active operations in the field or from wounds or injuries sustained on duty (not in action) within seven years after removal from duty for the disease or injury.	
Rank of officer (i.e., permanent rank, unless the officer holds *only* temporary rank).	Pension to widow (during widowhood).	Compassionate allowance for each child (sons till 18, unmarried daughters till 21).	Gratuity in addition to pension, &c.		Pension to widow (during widowhood). (No gratuity is payable in *these cases.*)	Compassionate allowance for each child (sons till 18, unmarried daughters till 21).
	Yearly.	Yearly.	Widow.	Each child.	Yearly.	Yearly.
	£	£	£	£ *s.* *d.*	£	£ *s.* *d.*
Lieut.-Col.	180	24	450	150 0 0	153	20 0 0
Major ...	140	21	300	100 0 0	105	17 10 0
Captain ...	100	18	250	83 6 8	75	15 0 0
Lieut. ...	80	15	140	46 13 4	60	12 10 0
2nd Lieut.	80	15	100	33 6 8	60	12 10 0

Twice the above rates of compassionate allowance may be granted to motherless children. If an officer (Class A) leaves a *daughter only* (unmarried and under 21) she may be granted, in lieu of the above rates, a special allowance varying from £40 to £90 a year according to rank. These awards are in addition to the gratuity.

If an officer (Class A) leaves neither a widow nor legitimate child, his mother, if a widow without other pension or adequate provision, may be granted a special pension varying from £40 to £90 a year according to rank, provided that she had been mainly dependent on the officer.

If an officer (Class A) leaves neither widow, legitimate child, parent, nor brother a similar pension may be granted to his sister, or sisters jointly, if unmarried, subject to the above proviso.

All applications for the grant of pensions, as above, should be addressed to the Secretary, War Office, Whitehall, S.W.

THE SCOTTISH MEDICAL SERVICE EMERGENCY COMMITTEE.

This strongly constituted committee comprises: The President of the Royal College of Physicians of Edinburgh; the President of the Royal College of Surgeons of Edinburgh; the President of the Royal Faculty of Physicians and Surgeons of Glasgow; the Dean of the Faculty of Medicine, University of Edinburgh; the Dean of the Faculty of Medicine, University of Glasgow; the Dean of the Faculty of Medicine, University of Aberdeen; the Dean of the Faculty of Medicine, University of St. Andrews; Dr. John Adams (Glasgow); Dr. G. C. Anderson (Methil); Dr. J. R. Currie (Edinburgh); Dr. John Gordon (Aberdeen); Dr. J. R. Hamilton (Hawick); Dr. John C. M'Vail (Edinburgh); Dr. John Playfair (Edinburgh); and Dr. John Stevens (Edinburgh). Dr. Norman Walker, the treasurer of the Royal College of Physicians of Edinburgh, is acting as convener, and Mr. T. H. Graham as secretary.

Dr. Norman Walker has issued through the secretaries of the divisions of the British Medical

Association three schedules or forms to be distributed to medical men, so that the Emergency Committee may be able to ascertain how far the numbers of medical men in any given area have already been reduced, and may thus be in a position to estimate what further depletion would be involved by additional offers of whole-time service. The Emergency Committee does not propose to deal with offers of part-time service at all.

The first form, Schedule A, asks for particulars concerning all medical practitioners in the given area who had been accepted for service before June 15th, 1915, and takes cognizance of those who are already engaged in part-time service.

Schedule B, dealing only with whole-time appointments, is addressed to practitioners who before June 15th had applied for a whole-time service. On this form the practitioner is asked to state whether he is over or under 40 years of age, whether his application was sent in before or after May 15th, and what was his medical work at the time of application—i.e., general practitioner, surgeon or other specialist, medical officer of health, school medical officer, or hospital resident.

Schedule C is addressed to practitioners who on June 15th had not applied for service, whole-time service alone being considered, but who are ready to do so if suitable arrangements can be made. The same information as to age and previous medical experience is required by the form.

We hope that the efforts of the Scottish Medical Service Emergency Committee to coördinate and organise medical service for military purposes will prove successful, for they have certainly been, and continue to be, of a very practical sort; and we are sure that the committee will be able to rely on the help of the British Medical Association, whose divisions make convenient centres for local activity. The convener lays great stress upon the rapid return to him at the Royal College of Physicians of Edinburgh of the filled-up schedules, substantially accurate information being required at once.

THE HEALTH OF PRISONERS IN RUHLEBEN.

The following letter, dated June 14th, has been received this week from a member of our staff who is interned at Ruhleben:—

> A fellow prisoner received to-day in a letter a cutting from an English newspaper, undated, reporting an interview with some of the men released from here, on having reached the age limit, on June 6th. The interview is said to have taken place during a stay in Rotterdam on the home journey. After various remarks about the prisoners' camps and the food the released man is credited with the statement that "50 cases of small-pox have occurred in the camps." As the fact of the internment is of itself a sufficient cause of anxiety to relatives at home, I think it is wrong to spread an unfounded statement of this kind. Let those who are lucky enough to be released stick to the truth; it is absolutely superfluous to embellish it by drawing on the imagination. I can assure you that not a single case of small-pox has occurred in the camps; the suggestion has not even circulated as a camp rumour. During the past weeks some cases of German measles have occurred; the sufferers were at once isolated and underwent treatment in the lazaretto; at the same time we were supplied with a solution of lysoform with which to disinfect our compartments, clothing, and bedding. During the past fortnight all the compartments in the stables which form our prison have been whitewashed, while a large number of men are being cleared out of the lofts and transferred to new wooden barracks. On the whole, in my opinion, the general health of the camp is very good, and we keep up our spirits by forms of athletic sport and varied entertainments. I am glad to say that I am in the best of health, and am busy the greater part of the day on behalf of my fellow prisoners.

We saw the communication to which our correspondent alludes, and can well believe that it added to the anxiety of those who had relatives interned as prisoners at Ruhleben. It happens to be very unlikely that an outbreak should have occurred and remain unknown to our correspondent.

ROYAL ARMY MEDICAL CORPS AND COMBATANT MEDICAL MEN.

Medical men at present serving as combatant officers or in the ranks may now be permitted to be transferred to the Royal Army Medical Corps on application made through their commanding officers.

Mr. Charters Symonds, consulting surgeon to Guy's Hospital, has been appointed a consulting surgeon to H.M.'s Forces in Malta, with the temporary rank of Colonel, A.M.S.

THE RED CROSS SOCIETY AND THE ORDER OF ST. JOHN.—A meeting was held at the Mansion House on June 16th in support of the Lord Mayor's special appeal on behalf of the funds of the Red Cross Society and the Order of St. John, the Lord Mayor being in the chair. The Lord Mayor spoke warmly of the work done during the past ten months, and highly commended the devoted services of the surgeons, nurses, orderlies, and voluntary aid detachments. The immediate problem was how to collect the large amounts still necessary for the carrying on of the work. During the last few weeks Sir Edward Clarke, Sir Benjamin Franklin, and Sir Frederick Treves had been canvassing City houses for subscriptions with excellent results. The Marquis of Lansdowne, who has succeeded the late Lord Rothschild (a name, as he pointed out, not likely to be forgotten in the City of London) as chairman of the council of the Red Cross Society, in proposing a resolution expressing sympathy with, and pledging support for, the Lord Mayor's appeal, approved the wisdom of the course adopted by the Red Cross Society and the Order of St. John in setting up a joint committee, which now meets regularly and conducts with perfect harmony the joint work of the two societies, thus effecting a great economy in both finances and effort. They found themselves called on to make a far greater effort than any that could have been expected, one which must be commensurate with the dimensions of a war waged with intensity, by unexampled numbers, and by methods abhorrent to all ideas of civilisation and humanity. Describing the society's work, Lord Lansdowne pointed out that they had to take care, not only of soldiers, but of sailors, and to come to the help of other countries stricken not only with injuries but with disease. Stores had been sent to East Africa, the Cameroons, Rhodesia, and China—in fact, all over the world. They had established great base hospitals at home and abroad, including the hospital for Indian soldiers in the New Forest; also some 900 auxiliary home hospitals and convalescent homes in private residences. He paid a strong tribute to the surgeons and nurses, many of whom were helping at great personal sacrifice, and emphasised the good relations maintained throughout with the Royal Army Medical Corps, largely due to the recognition of the fact that the society's operations must be kept subsidiary to those of the army, to which they were proud to serve as auxiliaries. They were endeavouring also to mitigate the lot of those unhappy ones who had been deprived of sight, and to aid in tracing the missing and wounded. He acknowledged the substantial financial aid which, in addition to the splendid services of their sons, had been rendered by the great dominions, Canada in Flanders, and Australia and New Zealand in Gallipoli. Australia alone had sent £100,000, besides shipments in kind. He specially mentioned the munificent gift of Mr. W. W. Astor of £20,000—the second of that amount. Mr. Arthur Stanley, M.P., in seconding the motion, cited two instances to show how admirably the work was done. One evening an order was received at 6 P.M. for 20,000 articles, all of which were purchased, packed, and despatched and on their way by 10 A.M. next morning. One Sunday morning the War Office informed them that a hospital was urgently required in Calais, which for valid reasons the R.A.M.C. were not in a position to supply. At 5.30 that evening a special train left Victoria carrying with it the full personnel, 120 beds, a large amount of stores, and motors and ambulances. Sir Robert Hudson showed how unnecessary expense in working was avoided, and Sir Arthur Lawley how comforts were provided near the firing line which the Royal Army Medical Corps could not be expected to provide, and how thousands of lives had been saved by the facilities for rapid transport afforded by their motors. Mr. Herbert Gibbs, Sir Dyce Duckworth, and Sir Edward Clarke also spoke. The resolution was carried. Donations varying from £20,000 to £50, and amounting to £87,455, were announced.

ROYAL NAVAL HOSPITAL, HASLAR.—A new wing is being built to the Royal Naval Hospital at Haslar out of the sum of £50,000 raised at the beginning of the war by the women of Canada and placed at the disposal of the Imperial Government. The operations in the Dardanelles have taxed the hospital's capacity to the utmost, so that the 250 additional beds which the new wing will accommodate will be of the greatest immediate utility. The new building of three floors will be isolated from the main one and will be entirely self-contained. It is expected to be completed by the end of the year.

WOUNDED ALLIES RELIEF COMMITTEE.—The committee, in conjunction with the British Registrar-General, has compiled an official register of Belgian soldiers who have been in hospital in England and of those interned in Holland and imprisoned in Germany. By this means many thousands of soldiers have been brought in touch with their families, and the register has solved some difficult cases of identity. The committee is eager to assist private persons, hospitals, or other institutions in need of information about Belgian soldiers or their families. All applications should be addressed to the committee's offices at Sardinia House, Kingsway, W.C.

The committee's typhus hospital units, which left England on June 3rd for Montenegro, are to be stationed at Podgoritza and Nikshich. Each unit consists of 100 beds, with full equipment for both surgical and fever work.

VACANCIES FOR MEDICAL OFFICERS.—We are asked to state that there are vacancies for five medical officers prepared to serve abroad in the 2nd and 3rd Line Welsh Border Mounted Brigade Field Ambulance. Pay and allowances as in the Regular Army, together with outfit and camp kit grants. Full particulars can be obtained on application to the Officer Commanding, 2nd Line Welsh Border Mounted Brigade F.A., Lambton Park Camp, co. Durham.

A NEW HOSPITAL FOR WOUNDED OFFICERS.—On June 18th General Sir O'Moore Creagh opened the new Prince of Wales's Hospital for Wounded Officers at Staines. The hospital is the gift of the Maharaja Jam Sahib of Nawanagar (whom most people will more readily recognise under the well-known name of "Ranji," the Indian cricketer). It is established in his residence at Staines, "Jamnagar," and the cost of maintenance is undertaken by himself in conjunction with the Maharaja of Kashmir and the Maharaja of Patiala.

FLEET-SURGEON LOUIS GREIG.—Mr. Kenneth Campbell, F.R.C.S., writes to us to call attention to the fact that Fleet-Surgeon Louis Greig, the famous Scottish International half-back, who took part in the Antwerp expedition, being an athlete could without difficulty have escaped into Holland with the others, but being also a surgeon his sense of duty impelled him to remain with the wounded. He is now a prisoner of war at Halle, and Mr. Campbell writes in the hope that as Fleet-Surgeon Greig is so well known some person of influence may exert himself on his behalf. It will be noted in our Parliamentary columns that in answer to a question in the House of Commons on June 17th, Lord Robert Cecil stated that an agreement had been come to by the respective countries permitting the exchange of German and British military medical officers, and that it would become operative as soon as the status of the medical personnel could be definitely settled.

PRESENTATION OF A MOTOR AMBULANCE.—On June 18th a motor ambulance, fitted up with improvements suggested by Colonel H. J. Mackay, assistant director of medical services, Wessex division, was presented by the medical men of the administrative county of Devon to the Devonshire Regiment. There were over 80 subscribers, and the ambulance, after being tested by the Royal Army Medical Corps at Woodbury Camp, Devon, will be available for service "at the front."

CORNISH MEDICAL MEN AND MILITARY SERVICE.—At a meeting held recently at St. Austell, Cornwall, to consider the appeal for an increased number of medical men for the Royal Army Medical Corps, it was resolved to call upon all medical men who were of eligible age to offer their services, and a committee was appointed to organise a scheme for carrying on the practices of those who volunteer for service. Some discussion took place in reference to the granting of medical prescription books to the dependents of soldiers and sailors who are serving, and it was decided to urge the local relief committee to exercise more care in their distribution, so as to prevent abuse of gratuitous medical services.

FREE PHYSICAL TRAINING FOR THE REJECTED.—Persons of military age who, being desirous of enlisting, have presented themselves and been rejected on the ground of deficient physical development, can now obtain, if they so desire, a month's course of physical training gratis at the Central Y.M.C.A. in the Tottenham Court-road, where owing to increased facilities 1000 applicants a month can be dealt with.

A FUND is being raised by a committee, of which the honorary treasurer is Sir Laurence Gomme, to establish and maintain a fleet of motor ambulances in Italy.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Medicines and Immature Spirit.

IN the course of the consideration of the Finance Bill in committee of the House of Commons on June 16th Mr. GLYN-JONES raised the question of the authority that was to be entrusted with the function of determining in what cases the additional duty on immature spirit was to be remitted because it was used in medicinal preparations. He suggested that this function should be discharged by an advisory body "representing medicine, pharmacy, and the Commissioners of Customs and Excise." The CHANCELLOR of the EXCHEQUER took objection to appointing a statutory body, but he promised to set up "a properly qualified medical body to advise the Commissioners of Customs and Excise what preparations may properly be described as medical preparations." This body, of course, will not owe its existence to statutory authority.

Duty-free Spirits for Hospital Tinctures.

The CHANCELLOR of the EXCHEQUER has given notice of a new clause, which he will move to insert in the Finance (No. 2) Bill, giving power to authorise the use of duty-free spirits in hospitals in the preparation of tinctures. The proposed new clause is in the following terms:—"(1) Section eight of the Finance Act, 1902 (which gives power to authorise the use of spirits without payment of duty in arts and manufactures), shall apply to the preparation in a public hospital of tinctures and other articles to be used for medical purposes in the hospital as it applies to arts or manufactures in which the use of spirits is required. (2) If the treasurer or other responsible officer of a public hospital shows, to the satisfaction of the Commissioners of Customs and Excise, that any tinctures or other articles which contain spirits or in the preparation or manufacture of which spirits were used have within the preceding six months been used for medical purposes in the hospital, he shall be entitled to obtain from the Commissioners repayment of any duty paid in respect of the spirits contained in or used in the preparation or manufacture of the said tinctures or other articles. If any person, for the purpose of obtaining any repayment under the foregoing provision, knowingly makes any false statement or false representation he shall be liable, on summary conviction, to imprisonment, with or without hard labour, for a term not exceeding six months. (3) For the purpose of the foregoing provision the expression 'public hospital' means a hospital supported by any public authority or wholly or partly out of any public or charitable funds or by voluntary subscriptions."

HOUSE OF COMMONS.

THURSDAY, JUNE 17TH.

Exchange of British and German Medical Officers.

Mr. PARTINGTON asked the Under Secretary for Foreign Affairs whether an agreement had been reached regarding the exchange of British and German military medical officers.—Lord ROBERT CECIL wrote in reply: The answer is in the affirmative, and it is hoped that the agreement will shortly be made effective. Some delay has been caused owing to the necessity for the military authorities to determine exactly the members of the British and German military medical personnel who are entitled to be exchanged.

Navy Medical Appointments.

Commander BELLAIRS asked the Secretary to the Admiralty whether the Board could see their way to increasing the remuneration given to the members of the medical profession who were appointed as naval surgeon and agent in different districts, having regard to the alterations of conditions which the war had caused since the terms were framed.—Mr. MACNAMARA answered: No reason is seen for increasing the emoluments of these posts which can always be satisfactorily filled upon the present terms, which, with a few exceptions, being based on fees for services rendered, are elastic enough to ensure that additional services during the war are recognised by additional remuneration.

Antityphoid Inoculation.

Replying to Mr. CHANCELLOR in regard to the question of antityphoid inoculation in the army, Mr. TENNANT (Under Secretary for War) said that the circular of the Research Defence Society had War Office sanction and authority and no reason was seen for withdrawing such authority.

Royal Army Medical Corps (Territorial Force).

Mr. EVELYN CECIL asked the Under Secretary for War whether officers or men of the Royal Army Medical Corps, Territorial Force, who had signed A. F. E. 624 A were liable to be transferred to combatant units; and, if so, whether it was the intention of the War Office to transfer officers and men originally enlisted in the Royal Army Medical Corps to the artillery or infantry without their further express consent.—Mr. TENNANT answered: Yes, sir; but the signing of the form is not compulsory, and if it is signed the consent of the officer or man will have been obtained. That is the purpose of the form.

Respirators for Service in the Dardanelles Operations.

Mr. G. GREENWOOD asked the Under Secretary for War whether all possible steps had been taken to provide the troops in the Gallipoli Peninsula with respirators and all other appliances to enable them successfully to resist attempts to poison them by means of noxious gases.—Mr. TENNANT replied: Yes, sir.

Infantile Mortality and Legislation.

Sir GEORGE TOULMIN asked the Prime Minister when the Bill amending the Notification of Births Act, foreshadowed by the President of the Local Government Board, would be introduced.—Mr. ASQUITH replied: I regret that I can as yet give no date when this Bill will be proceeded with.

Mr. ANDERSON asked the President of the Local Government Board whether the increase in the rate in infantile mortality was partly or largely due to the shortage of doctors and nurses, the increased industrial employment of working women, and the absence of suitable agencies and centres for child welfare; whether he would arrange, in addition to the promised legislation, to utilise the services of some proportion of the 80,000 women who had enrolled themselves for national work, with a view to establishing centres for the care of infants and so mitigating an evil which the country could not afford at any time, least of all at present.—Mr. LONG answered: I am advised that the recent increase in mortality amongst young children has been mainly due to measles and its sequelæ. I am hoping to introduce a Bill very shortly to facilitate the establishment of centres for the care of mothers and infants.

Mr. KING asked the President of the Local Government Board how many children under the age of 1 year, of or over the age of 1 year and under 2 years, of or over the age of 2 years and under the age of 3 years respectively died in England and Wales during the six months immediately preceding April 1st, 1915, and what were the numbers of such children so dying during the corresponding periods 1913–14, 1912–13, and 1911–12.—Mr. LONG wrote in reply: The number of deaths of children under the age of 1 year in England and Wales during the six months immediately preceding April 1st, 1915, was 50,209. During the corresponding periods of 1913–14, 1912–13, and 1911–12 the numbers were 49,029, 47,357, and 48,944 respectively. The number of deaths of children between 1 and 2 and between 2 and 3 years old cannot yet be given for the six months immediately preceding April 1st, 1915.

Mr. KING asked the Secretary for Scotland how many children under the age of 1 year, of or over the age of 1 year and under the age of 2 years, of or over the age of 2 years and under the age of 3 years, respectively, died in Scotland during the six months immediately preceding April 1st, 1915; and what were the numbers of such children so dying during the corresponding periods 1913–14, 1912–13, and 1911–12.—Mr. MCKINNON WOOD (in a written answer) replied: The numbers of deaths of children aged 1 and 2 years are not available in portions of years. The following are the numbers of deaths of children of less than one year old in periods named:—

Oct. 1st, 1911, to March 31st, 1912	7234
,, 1912, ,, 1913	7509
,, 1913, ,, 1914	7228
,, 1914, ,, 1915	8276

Mr. KING asked the Chief Secretary to the Lord Lieutenant of Ireland how many children under the age of 1 year, of or over the age of 1 year and under the age of 2 years, of or over the age of 2 years and under the age of 3 years, respectively, died in Ireland during the six months immediately preceding April 1st, 1915, and what were the numbers of such children so dying during the corresponding periods 1913–14, 1912–13, and 1911–12.—Mr. BIRRELL wrote in reply: The following table sets out for Ireland the numbers of deaths of infants under 1 year of age, at 1 and under 2, and at 2 and under 3 registered (1) during the six months ended March 31st, 1912, 1913, and 1914, and (2) during the quarter ended Dec. 31st, 1914. The unrevised figures of deaths of infants under 1 year of age registered during the quarter ended March 31st, 1915, are also shown, but the corresponding figures for infants between 1 and 3 years are not available.

Period.	Number of deaths registered at ages of—		
	Under 1 year.	1 and under 2 years.	2 and under 3 years.
Six months ended March 31st, 1912	4,996	1,276	606
,, ,, ,, 1913	4,835	1,301	651
,, ,, ,, 1914	4,612	1,214	600
Three months ended Dec. 31st, 1914	2,046	487	289
,, ,, ,, March 31st, 1915	2,829	—	—

Belgians in Lunatic Asylums.

Mr. LEIF JONES asked the President of the Local Government Board whether there was any public fund available to pay for the maintenance of Belgian refugees who had had to be sent to county lunatic asylums in this country so that the local rates might not be burdened with this national charge.—Mr. LONG answered: The Local Government Board has the authority of the Treasury to pay for the treatment of refugees in lunatic asylums, and in a certain number of cases have already agreed to make payments of this character.

Mr. LEIF JONES: Will payments which have already been made by the local authority be refunded by the Local Government Board?—Mr. LONG: Certainly.

Treatment of Mental Strain in Soldiers.

In the course of the debate in Committee of Supply on the Home Office vote, Mr. RENDALL called attention to the institutions in which soldiers suffering from mental strain were being treated. He said that it was a calamity that men returning from the front with their mental balance temporarily deranged should be placed under the control of the War Office. The War Office was getting hold of various asylums which he should have thought were under the control of the Home Office. The men were put into these so-called hospitals, which were really asylums, and under the control of medical men who had been attached to these asylums. The soldiers in these cases ought to be under the treatment and control of first-rate general practitioners and not under the control of the Lunacy Acts. Some new proposal ought to be formulated by the Home Office for dealing with these soldiers.

Mr. BRACE (Under Secretary for the Home Department) said: A question which has been raised in this debate is that of the men who have lost their reason in consequence of the hardships of this war, and the Government were criticised because the War Office has been selected as the authority for looking after these afflicted people. It is thought both by the Home Office and by the War Office that that is the better arrangement. If the soldiers who lost their reason in consequence of the hardships of the war were put in the ordinary asylums of the country it would, in the judgment of those who have a right to speak on this matter, be one of those experiences for which the soldiers after their recovery would not thank the nation. The army authorities have much greater latitude in regard to this matter, for they can send the men to hospitals, and when cured they will come out without any of the stigma which might attach to them if they had been confined in any of the asylums of the land. On the whole, the weight of argument is distinctly in favour of allowing the War Department to deal with these unhappy cases, and we ask honourable Members to agree with us that that is the best way of dealing with them.

MONDAY, JUNE 21ST.

Medical Students and War Service.

Sir PHILIP MAGNUS asked the Under Secretary for War whether, having regard to the fact that many of the younger university medical students of military age had been reproached for not having joined the forces of the Crown, he would state whether it was considered preferable that such students in their first or second year should accept some military position or should continue their medical studies with a view to qualification.—Mr. TENNANT replied: I am not aware of the reproaches to which the honourable Member refers. It is clear that if students in their first or second year join the combatant ranks in very large numbers there will probably be for some years after the war a serious scarcity of doctors. Any expression, therefore, of official opinion which might seem to place on them the obligation of taking up immediate military duty would hardly be in the interests either of the army or of the community as a whole.

The Health of the Expeditionary Forces.

Mr. KING asked the Under Secretary for War whether he would give some information or figures to show the prevalence of sickness in the armies at home and on active service during the war, and particularly state whether the health of the forces compared favourably with health conditions in previous wars.—Mr. TENNANT answered: I will give information, not figures. As far as important preventable diseases are concerned, the health of the Expeditionary Forces compares not only favourably with the health conditions of any previous campaign, but nothing approaching it has ever been known in the past.

TUESDAY, JUNE 22ND.

Milk and Dairies Act Postponement Bill.

Mr. HAYES FISHER moved the second reading of the Milk and Dairies Postponement Act. He said that last year two useful measures, the Milk and Dairies Act and the Milk and Dairies (Scotland) Act had been passed for the purpose of improving the milk-supplies of the country. The present Bill proposed to postpone the date on which these measures should come into operation until one year after the termination of the war, but it was provided that they might be brought into operation earlier by Orders of the Local Government Board, if that course proved feasible. The Acts in question were designed to prevent the sale of tuberculous milk, or milk exposed to contamination or dirt, or adulterated milk. More stringent regulations were imposed on the milk industry, and also more detailed and systematic inspection was required. That made for more expense. Furthermore, it was extremely difficult at present to add to the number of veterinary surgeons. It would be necessary under the Bill also to enlarge the staffs of the local authorities, but these staffs were very much depleted. More supervision on the part of the medical officers of health would also be required, but they were otherwise engaged at present. If the two Acts were not postponed it would seriously embarrass the local authorities.

Mr. RENDALL regarded the postponement of the two measures as deplorable.

Mr. DENNISS also regretted the necessity for postponement, as the question of milk-supply had a most important bearing on the question of infant mortality. He thought that medical men could have been obtained to deal with tuberculous milk and questions of sanitation.

Sir GEORGE TOULMIN recognised that there was no alternative to the postponement of the operation of the Acts owing to the administrative difficulties involved in putting them into force. He hoped that the Local Government Board would make up for the postponement later on, by the strict enforcement of the provisions when they did come into operation.

The Bill was read a second time.

BOOKS, ETC., RECEIVED.

ÉCOLE DE MÉDICINE TROPICALE, Junqueira, Lisbon.
Arquivos de Higiene e Patologia Exóticas. Vol. V.

FARRELL, C. P., 117, East Twenty-first-street, New York.
An Ethical Problem, or Sidelights upon Scientific Experimentation on Man and Animals. By Albert Leffingwell, M.D.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.
X Rays and How to Produce and Interpret Them. By Harold Mowat, M.D. Edin., Temporary Lieutenant, R.A.M.C. Price 8*s.* 6*d.* net.

GOVERNMENT PRINTING OFFICE, Washington.
Index Catalogue of the Library of the Surgeon-General's Office U.S. Army. Second series. Vol. XIX.-U to Uzielli. Price $2.00.

GREEN, W., AND SON, Edinburgh and London.
Simple Methods of Radiographic Localisation. By Thomas Rankine. Price 1*s.* net.

KNAPP, DREWETT, AND SONS, Victoria-street, Westminster.
Symbiogenesis: The Universal Law of Progressive Evolution. By H. Reinheimer. Price 10*s.* 6d. net.

LEWIS, H. K., London.
Materia Medica and Pharmacy for Medical Students, with an Appendix on Incompatibility. By Reginald R. Bennett, B.Sc. Lond., F.I.C. Third edition. Price 4*s.* 6*d.* net.
Amœbiasis and the Dysenteries. By Llewellyn Powell Phillips, M.A., M.D. Cantab., F.R.C.P. Lond., F.R.C.S. Eng., Professor of Medicine in the Egyptian Government School of Medicine, Cairo. Price 6*s.* 6*d.* net.

LIPPINCOTT, J. B., COMPANY, Philadelphia.
Diabetes Mellitus: Designed for the Use of Practitioners of Medicine. By Nellis B. Foster, M.D.
Nursing and Care of the Nervous and the Insane, by Charles K. Mills, M.D. Third edition, revised. By N. S. Yawger, M.D. Price 5*s.* net.

LONGMANS, GREEN, AND CO., London, New York, and Bombay.
Elements of Optics for the Use of Schools and Colleges. By George W. Parker, M.A. Price 2*s.* 6*d.*
Clinical Anatomy of the Gastro-Intestinal Tract. By T. Wingate Todd, M.B., Ch.B., F.R.C.S Eng. Price 6*s.* net.

PUTNAM'S, G. P., SONS, London and New York.
John Shaw Billings: A Memoir by Fielding H. Garrison, M.D. Price 10*s.* 6*d.* net.

SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED.
The Cure of Self-Consciousness. By James Alexander. Price 3*s.* 6*d.* net.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ADAMS, ALFRED, M.B., B Ch. Oxon., M.R.C.S., has been appointed Acting Deputy Medical Officer for the Second District by the Liskeard (Cornwall) Board of Guardians.

BAIRD, W. J., M.B., Ch.B. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Earls Barton District of the county of Northampton.

BALLANTYNE, ARTHUR J., M.D. Glasg., has been appointed Honorary Consulting Ophthalmic Surgeon to the Glasgow Royal Maternity and Women's Hospital.

BARKES, W., M.D. Durh., has been appointed Medical Officer of Health by the Houghton-le-Spring Urban District Council, and Certifying Surgeon under the Factory and Workshop Acts for the Houghton-le-Spring District of the county of Durham.

BARRY, W. J. M., M.D. Durh. & Brux., F.R.C.P. Edin., has been appointed Honorary Consulting Physician to the Royal Hamadryad Seamen's Hospital.

CHAMBERLAIN, EDWARD BEATTY, M.R.C.S., L.S.A., has been appointed Acting Deputy Medical Officer for the Third District by the Liskeard (Cornwall) Board of Guardians.

COOMBE, RUSSELL, F.R.C.S. Eng., has been appointed Consulting Surgeon to the Axminster Cottage Hospital.

DONALD, JOHN, M.D., C.M. Glasg., D.P.H. Camb., has been reappointed Medical Officer for the Sixth District by the Liskeard (Cornwall) Board of Guardians.

FORTY, DANIEL HERBERT, M.R.C.S., L.R.C.P. Lond., has been appointed Acting Medical Officer for the Charfield District by the Thornbury (Gloucestershire) Board of Guardians.

HILLYER, W. W., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Aberavon District of the county of Glamorgan.

LAIRD, D. C., M.B., C.M. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Milngavie District of the county of Dumbarton.

LANGRAN, WILLIAM, L.R.C.P. & S., L.M. Edin., L.A.H. Dub., has been appointed Medical Officer to the Axminster Cottage Hospital.

MAY, R. J., L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Swords District of the county of Dublin.

MENCE, WILLIAM CHARLES, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Axminster Cottage Hospital.

ORMSBY, G. H., L.S.A., L.M.S.S.A. Lond., has been appointed Medical Officer of Health to the Standish Urban District Council.

PADBURY, GEORGE JOHN, M.B. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Axminster (Devon) Cottage Hospital.

RIORDAN, W., L.R.C.S. Irel., L.K.Q.C.P. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Dripsey District of the county of Cork.

SEAL, PHILIP HENRY, M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer to the Children's Home by the South Molton (Devon) Board of Guardians.

SELFE, J., L.R.C.P. Lond., M.R.C.S., D.P.H., has been appointed Medical Officer of Health for Scarborough.

SEPHTON, R. B., L.R.C.P. & S. Edin., L.R.F.P.S. Glasg., has been appointed Temporary Medical Officer of Health to the Warrington Rural District Council.

STIRK, PERCY HERBERT, M.R.C.S., L.R.C.P., D.P.H. Lond., has been appointed Acting Deputy Medical Officer of Health for the St. Thomas (Exeter) Rural District Council.

TRESIDDER, WILLIAM ELLIOT, M.B., B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Scattered Homes for Children by the St. Germans (Cornwall) Board of Guardians.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

Bedfordshire County Council.—Temporary School Medical Officer. Salary £300 per annum.

Birkenhead Borough Hospital.—House Surgeon. Salary £300 per annum, with board and laundry.

Birmingham General Dispensary.—Resident Medical Officer, unmarried. Salary £250 per annum, with apartments, attendance, &c.

Birmingham and Midland Eye Hospital.—Junior House Surgeon. Salary £100 per annum, with residence, board, &c.

Bolton Infirmary and Dispensary.—Senior House Surgeon. Salary £230 per annum, with apartments, board, and attendance.

Bristol, Cossham Memorial Hospital, Kingswood.—House Surgeon. Salary £150 per annum, with board, residence, and laundry.

Bristol General Hospital.—House Physician for six months. Salary at rate of £150 per annum, with board, residence, &c.

Bristol Royal Infirmary.—Assistant to Ear, Throat, and Nose Department.

Bury Infirmary.—Senior and Junior House Surgeons. Salary £175 and £150 per annum respectively, with board, residence, and washing.

Cape Hospital Board.—Assistant Medical Officer, unmarried, for Somerset Hospital, Cape Town, or other Hospitals in the Peninsula. Salary £200 per annum, with rations and quarters.

Carlisle Non-Provident Dispensary.—Resident Medical Officer. Salary £200 per annum, with apartments (not board).

Carshalton, Surrey, Queen Mary's Hospital for Children.—Locum Tenens Assistant Medical Officer. Salary £6 6s. per week, with usual residential allowances.

Chester County Asylum.—Third Assistant Medical Officer, unmarried. Salary £200 per annum, with board, lodging, and washing.

Cirencester, Glos., 1st South Midland Mounted Brigade Field Ambulance.—Two Medical Officers to complete 2nd Line (Territorial).

City of London Hospital for Diseases of the Chest, Victoria Park, E.—Tuberculosis Officer. Salary at rate of £500 per annum, with lunch and dinner.

County of London.—Lecturers in First Aid, Home Nursing, Health, and Infant Care. Salary £1 1s. a lecture.

Coventry and Warwickshire Hospital.—Third House Surgeon. Salary 6 guineas per week, with board and residence.

Croydon Mental Hospital, Upper Warlingham, Surrey.—Second Assistant Medical Officer. Salary £250 per annum, with board, lodging, and laundry.

Folkestone, Royal Victoria Hospital.—House Surgeon. Salary as agreed, with board, residence, and laundry.

Great Missenden, Bucks, 3/2nd South Midland Mounted Brigade Field Ambulance.—Transport Medical Officer.

Guildford, Royal Surrey County Hospital.—House Surgeon. Salary £150 per annum, with board, residence, and laundry.

Hants County Asylum.—Locum Tenens. Salary 5 guineas per week, with apartments, board, washing, and attendance.

Hospital for Consumption and Diseases of the Chest, Brompton.—House Physician for six months. Salary 30 guineas. Also Assistant Resident Medical Officer. Salary £100 per annum, with board and residence.

Kent Education Committee.—Temporary School Dentist. Salary £250 per annum.

Leamington Spa, Warneford, Leamington, and South Warwickshire General Hospital.—Second Resident Medical Officer. Salary £200 per annum, with board, residence, and laundry.

Leeds Education Committee.—School Dental Officer. Salary £250 to £300 per annum.

Liverpool County Asylum, Rainhill.—Temporary Assistant Medical Officer. Salary £6 6s. per week, with apartments, board, attendance, and washing.

Manchester, County Asylum, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

Manchester Northern Hospital for Women and Children. Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Margate, Royal Sea-Bathing Hospital for Surgical Tuberculosis.—Resident Surgeon. Salary at rate of £150 per annum, with board, residence, and laundry.

National Hospital for Diseases of the Heart, Westmoreland-street, W.—Resident Medical Officer for six months. Salary at rate of £80 per annum, with board, residence, and washing.

Newcastle-on-Tyne, Stannington Asylum.—Locum Tenens. Salary 6 guineas per week, with board, &c.

Northumberland County Council.—Temporary Clinical Tuberculosis Medical Officer. Salary £500 per annum.

Nottingham General Hospital.—Senior House Physician and Assistant House Physician. Salary at rate of £300 and £250 per annum respectively, with board, residence, and laundry.

Paisley Parochial Hospital, Lunatic Wards, and Poorhouse, Craw-road.—Resident House Surgeon. Salary £230 per annum, with board and apartments.

Plymouth, South Devon and East Cornwall Hospital.—House Surgeon and House Physician. Salary as arranged, with board, residence, and washing.

Pontypool, Urban District of Abersychan.—Medical Officer of Health. Salary £70 per annum.

Putney Hospital (Chester Bequest), Putney Common, S.W.—Resident Medical Officer. Salary £150 per annum, with residence, board, and laundry.

St. Mark's Hospital for Cancer, Fistula, and other Diseases of the Rectum, City-road, E.C.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

St. Mary's Hospital for Women and Children, Plaistow, E.—Assistant Resident Medical Officer. Salary at rate of £90 per annum, with board, residence, and laundry.

St. Marylebone Infirmary, Rackham-street, Notting Hill, W.—First Temporary Resident Assistant Medical Officer, unmarried. Salary at rate of £225 per annum, with apartments, rations, and washing.

Salisbury General Infirmary.—House Surgeon and Assistant House Surgeon, unmarried. Salary £150 and £100 per annum respectively, with apartments, board, lodging, and washing.

Scarborough Hospital and Dispensary.—Senior and Junior House Surgeons. Salary £100 and £80 per annum respectively, with board, residence, &c.

Sheffield Royal Infirmary.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.

Sheffield, Wharncliffe War Hospital, Middlewood-road.—Resident Medical Officers.

South London Hospital for Women, 88-90, Newington-causeway, S.E.—Female Anæsthetist.

Stockport Infirmary.—Senior House Surgeon. Salary £200 per annum, with board, washing, and residence.

Sunderland Royal Infirmary.—Resident Medical Officer. Salary £150 per annum, with board, residence, and laundry.

Swansea General and Eye Hospital.—House Physician. Salary £200 per annum, with board, apartments, and washing.

Tunbridge Wells General Hospital.—House Surgeon, unmarried. Salary £250 per annum, with board, residence, &c.

Ventnor, Royal National Hospital for Consumption and Diseases of the Chest, Isle of Wight.—Assistant Resident Medical Officer.

Walsall and District Hospital.—Assistant House Surgeon and Anæsthetist. Salary £150 per annum, with board, residence, and laundry.

Warrington County Borough.—Temporary Assistant Medical Officer of Health. Salary £300 per annum.

Warrington Infirmary and Dispensary.—Senior and Junior House Surgeons. Salary £180 and £120 per annum respectively, with board, apartments, and laundry.

West Bromwich and District Hospital.—House Surgeon and Assistant House Surgeon, unmarried. Salary £150 and £120 per annum respectively, with residence, board, and laundry.

West Ham and Eastern General Hospital.—Resident Medical Officer. Salary £160 per annum. Also House Physicians and House Surgeons. Salary £120 and £100 per annum respectively, with board, residence, and washing.

Wigan, Royal Albert Edward Infirmary and Dispensary.—Junior House Surgeon. Salary £150 per annum, with board, apartments, and washing.

Windsor, King Edward VII. Hospital.—House Surgeon. Salary £100 per annum, with board, apartments, and washing.

Births, Marriages, and Deaths.

BIRTHS.

Bullock.—On June 14th, at Bigwood-road, Hampstead Garden Suburb, Elsa Gye, wife of W. E. Bullock, M.D., R.A.M.C., of a son.

Seymour.—On June 20th, at College Gates, Worcester, the wife of Harold F. Seymour, M.D., of a daughter.

Symes-Thompson.—On June 16th, at Gloucester-place, W., the wife of H. E. Symes-Thompson, M.D., of a son.

Watson.—On June 20th, at Lancaster-place, N.W., the wife of Major D. P. Watson, R.A.M.C., of a daughter.

MARRIAGES.

Allan—Woods.—On June 19th, at Christ Church, Southgate, London, N., John Allan, M.D. Edin., D.P.H., to Gertrude Buckston Agnes, youngest daughter of Josiah Woods, of London.

Ash—Pryce Jones.—On June 16th, at St. Mary Magdalene, Bersted, Bognor, Walter Martin Ash, M.B., B.S. Lond., Surgeon, R.N., to Gladys, youngest daughter of Mr. and Mrs. S. R. Pryce Jones, of "Newcourt," Bognor.

Bowden—Neville.—On June 17th, at St. John's Church, Bethnal Green, Lieutenant Ellis Campbell Bowden, R.A.M.C., to Dorothy, second daughter of Mr. and Mrs. J. Neville, of Shoreham, and late of "Leaside," Beckenham.

Bulstrode—Woolmer White.—On June 14th, at Salle Church, Christopher Victor Bulstrode, M.A., M.D. Cantab., Temporary Captain, R.A.M.C., to Marguerite, elder daughter of Mr. and Mrs. Woolmer White, of Salle, Norfolk, and Southleigh, Hants.

Chapman—Wallroth.—On June 17th, very quietly, at Sunbury-on-Thames, Donald Poyntz Chapman, Staff-Surgeon, R.N., to Florence Emily, third daughter of Mr. and Mrs. Frederick A. Wallroth, of Sunbury Lodge.

Evans—Rutherford.—On June 10th, at Dunkeld Cathedral, by the Rev. A. Howell, M.A., assisted by the Rev. W. Brownlie, B.D., A. Edward Evans, M.B., son of the late Edward Evans, C.E., and of Mrs. Evans, 3, Rotherwick Court, Golders Green, to Jessie Dorothy, second daughter of the Rev. T. R. Rutherford, M.A., Minister of Dunkeld.

Fox—Allen.—On June 16th, at Spanish-place Church, Manchester-square, London, W., Reginald A. Fox, L.D.S. Eng., D.D.S. Penn., Lieutenant, 2/4th South Lancs. Regiment, to Winnie, only child of the late Squire Winfield Allen, D.D.S., of Queen-street, Edinburgh, and Mrs. Squire Allen, of Edinburgh.

DEATHS.

Mactier.—On June 19th, at Kinnessburn, St. Andrews, William Fullarton Mactier, M.D., late Bengal Army, in his 93rd year.

Mouillot.—On June 20th, at Eton House, Harrogate, Francois Albert de Thierry Mouillot, the dearly beloved husband of Mary Mouillot, in his 56th year. Funeral Wednesday, June 23rd.

Wright.—On June 20th, at Alexandria, Lieutenant Eric Alfred Wright, R.A.M.C., of septic poisoning contracted in attending the wounded, aged 36 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

BEETLES AND RED ANTS AS CHOLERA CARRIERS.

THE danger of the transmission of disease by the domestic fly has been frequently demonstrated and is now generally acknowledged. But there are other domestic pests whose habits have not been so carefully studied. The black-beetle, for instance, conveys the cholera bacillus, at least in tropical climates. A recent issue of the *Philippine Journal of Science* contains an account of experiments made with the *Periplaneta americana* (Linn.), which infests private dwellings at Manila. This insect feeds on all kinds of organic matter, including fæces, and if precautions are not taken will crawl over food intended for human consumption. Some of these beetles were captured and fed on human dejecta containing cholera bacilli. Six hours later the fæces of the beetles were examined and found to contain cholera bacilli. In course of time the number diminished, though in one case bacilli were found 79 hours after the test meal. It would seem that the cholera bacilli do not multiply within the insect; but it is evident that if the fæces of the beetle are deposited on a damp surface the bacilli may live for a long time. One experiment showed that their vitality persisted for an entire day on a lettuce leaf and for 46 hours on an oyster. When experiments were made with guinea-pigs it was evident that the cholera germ had lost none of its virulence after sojourning for a while within the beetle. The red ant, also (*Monomorium latinode*, Mayr), is an omnivorous insect with a distinct liking for human dejecta, but the volume of its fæces is so small that experiments are difficult. Nevertheless, cholera bacilli have been detected in the bodies of red ants eight hours after they had been fed on cholera dejecta.

THE LEEWARD ISLANDS.

A REPORT on the Blue-book of this colony for the year 1913–14 has been received at the Colonial Office from the Governor, Sir H. Hesketh Bell, K.C.M.G. It states that the population at the last Census was 127,193, distributed amongst the islands as follows: Antigua, 31,394; Barbuda, 871; St. Kitts, 26,283; Nevis, 12,945; Anguilla, 4075; Dominica, 33,863; Montserrat, 12,196; Redonda, 4; Virgin Islands, 5562. During the year 3827 patients were admitted into the hospitals of the colony, and there were amongst them 354 deaths. In the central lunatic asylum in Antigua there were at the beginning of the year 129 inmates (70 males and 59 females); 53 were admitted during the year, 27 were discharged as cured, and 27 died. There are two leper asylums—one at Rat Island in Antigua and the other at Fort Charles in St. Kitts. As to the latter no statistics are given, but in Antigua there were 33 lepers at the beginning of the year, 8 were admitted during the year, and 1 died. There is no record in Antigua of any attendant at the asylum having contracted leprosy. The Alexandra Cottage Home for Incurables, Dominica, which is supported partly by voluntary contributions, maintained on an average 10 paupers. The dilapidated and insanitary collection of huts known as "Hyndman's Village" has been removed, and the site has been transformed into an open, clean, and well-drained space free from the possibility of mosquito infection. A model village is being laid out at Clare Hall. The erection and occupancy of seven cottages, provided with ample yard accommodation and each having a neat enclosed garden in front, serve as valuable object-lessons to such villages as appear to be contented with their squalid and overcrowded huts. Until 1913 the residents in St. John's, Antigua, were annually subject to the inconvenience of having their water services restricted, if not actually locked off, for periods of from four to six weeks during the dry months of the year. The erection of a large dam across the Body Pond stream has now obviated this inconvenience, and secures for the city an ample water-supply throughout the year. Much improvement has been effected in the Cunningham Hospital, St. Kitts, and one result is that the general public are now taking much more interest in the institution than was formerly the case. Both in St. Kitts and in Nevis the treatment of yaws by means of salvarsan in special wards continues to be vigorously prosecuted with excellent results. The visit of Dr. R. T. St. John Brooks, the bacteriologist sent out to report on the sanitary state of the ports of the colony with special reference to the dangers of plague, has done much to stimulate interest in sanitary questions and will result, doubtless, in improving existing conditions. Some time, however, must necessarily elapse before effect can be given to all Dr. Brooks's recommendations.

THE ROYAL EARLSWOOD INSTITUTION.

ONE of the distressing accompaniments of the war is the inevitable falling off in financial support that it must entail to many valuable philanthropic and charitable institutions. This is particularly to be regretted in the case of such of them as aim at caring for those who under no circumstances are capable of caring for themselves. A very serious sufferer is the Royal Earlswood Institution for Mental Defectives, which, in consequence of the war, has decided to forgo its annual festival dinner this year—a course which must deprive it of some £2000 of the funds needed for the support of its 500 defective inmates. Such a drop in the income would be serious at any time, but is doubly so when there is such a rise in the cost of the necessaries of life. It is sincerely to be hoped that the appeal which has been put forth by the board for an extra effort to meet this deficiency will not fall on deaf ears, and that subscriptions and donations, made payable to the secretary, Mr. Harry Howard, will be forthcoming to help to maintain the institution in its much needed activity.

P.L.M. TOURIST MOTOR-CARS.

THE Paris, Lyons, and Mediterranean Railway motor-cars, which made their first appearance three or four years ago, are announced to run daily (when not otherwise stated) this summer, between July 1st and Sept. 15th, as follows:—*Route des Alpes:* Briançon and Grenoble, viâ the Lautaret Pass; Grenoble and Aix-les-Bains, through the three passes of La Chartreuse and the Chalet (P.L.M. Restaurant, altitude 6950 feet); Aix-les-Bains and Annecy; Annecy—Le Fayet—St. Gervais-les-Bains and Evian. *Dauphiné:* Grenoble and St. Pierre-de-Chartreuse (out viâ La Placette, home viâ Le Sappey); Grenoble and Villars-de-Lans, viâ the Grands Goulets; Montdauphin—Guillestre and Abriès (horse cars). *Savoie:* Moutiers—Salins and Pralognan; Bourg-St. Maurice and Petit St. Bernard; Bourg-St. Maurice and Val d'Isère. *Jura:* Genève and St. Claude, viâ La Faucille. *Auvergne* (June 1st to Oct. 31st): St. Flour and Chaudesaigues; (June 15th to Sept. 15th): Issoire and Saint-Nectaire (twice daily). A detailed time-table may be obtained on application to the offices of the company, 179, Piccadilly, London, W.

Wanderer.—The selection of Osler's Practice and Pembrey's Pathology should meet the requirements admirably. We would suggest the addition of Essex Wynter's Minor Medicine (1914, second edition, D. Appleton and Co., London), or Leonard Williams's Minor Maladies and their Treatment (Baillière, Tindall, and Cox). For surgery we suggest Lejars' Urgent Surgery, translated by Dickie (1909, Simpkin, Marshall, and Co., price 57*s.* 6*d.* net the two volumes). An exceedingly useful book is the Newer Physiology in Surgical and General Practice, by A. Rendle Short (1914, third edition, John Wright and Sons, Limited, Bristol, price 5*s.* net). For hygiene and sanitation, an admirable little book by Lieutenant-Colonel A. M. Davies, R.A.M.C., is entitled "A Handbook of Hygiene" (1913, fourth edition, Charles Griffin and Co., Limited, London, price 10*s.* 6*d.* net.); also Hygiene and Public Health by Parkes and Kenwood (fourth edition, H. K. Lewis, London, price 12*s.* 6*d.* net).

E. F. has omitted to enclose his name and address.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 9.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 23rd, 1915.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
June 17	30·156	N.E.	...	110	70	51	50	53	Cloudy
,, 18	30·206	N.E.	...	114	64	49	49	55	Cloudy
,, 19	30·164	N.E.	...	116	68	45	47	53	Cloudy
,, 20	30·160	N.E.	...	117	70	49	52	57	Fine
,, 21	29·934	E.	...	109	73	49	56	60	Fine
,, 22	30·010	E.	...	112	71	50	54	60	Fine
,, 23	29·944	E.	...	80	61	51	53	58	Cloudy

The following magazines, journals, &c., have been received:—Cleveland Medical Journal, Saint Paul Medical Journal, Albany Medical Annals, Dominion Medical Monthly, American Medicine, Medical Review of Reviews, Indian Journal of Medical Research, Calcutta Medical Journal, Canadian Practitioner and Review, Interstate Medical Journal, American Journal of Roentgenology, American Journal of Surgery, Journal of Nervous and Mental Disease, American Journal of Obstetrics, British Dental Journal, British Journal of Dental Science, National Medical Journal, Journal d'Urologie, Brain, &c.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Monday, June 28th.

ODONTOLOGY (Hon. Secretaries—F. Coleman, F. R. Smyth): at 8 P.M.

Paper :
Mr. Ernest Sturridge: The Discovery of Entamœba Buccalis in Pyorrhœa Pus and Treatment by Emetin Hydrochloride.

Discussion :
The Effects of Cleft Palate Operations on the Dental Arch (opened by Mr. H. Blakeway). Speakers:—Sir W. Arbuthnot Lane, Mr. Warwick James, and others.

Casual Communication :
Mr. George Thomson: A Method of Crowning Incisor Teeth.

SURGERY.—The Members of this Section are specially invited to attend the meeting of the Section of Odontology. (See above.)

Thursday, July 1st.

OBSTETRICS AND GYNÆCOLOGY (Hon. Secretaries—C. Hubert Roberts, Cuthbert Lockyer): at 8 P.M.

Specimens :
Mr. J. D. Malcolm: (1) Papilliferous Carcinoma of the Ovary associated with Adenomyoma of the Uterus; (2) Fibromyoma Free from Attachments in a Pelvic Abscess.

Short Communication :
Dr. E. A. Barton: The Condition of the Larynx and Trachea in the Stillborn Infant and its Bearing on Artificial Respiration.

Papers :
Mr. T. G. Stevens: Adenomyoma of the Recto-vaginal Septum.
Dr. W. S. A. Griffith: Determining Causes of the Fœtal Lie *in utero*.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY.—5 P.M., Croonian Lectures:—Surgeon-General Sir David Bruce, C.B: Trypanosomes causing Disease in Man and Domestic Animals in Central Africa. (Lecture IV.)

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patients (Mr. E. Gillespie). 2.30 P.M., Medical Out-patients (Dr. T. R. Whipham); Gynæcological Out-patients (Dr. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Surgical Operations (Mr. Carson). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. Howell Evans); Nose, Throat, and Ear Out-patients (Mr. H. D. Gillies). Radiography (Dr. Metcalfe). 3.30 P.M., Medical In-patients (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2.30 P.M., Throat Operations (Mr. Gillies). Children Out-patients (Dr. T. R. Whipham); Eye Out-patients (Mr. R. P. Brooks); Skin Out-patients. 5.30 P.M., Eye Operations (Mr. R. P. Brooks). 4.30 P.M., Clinical Demonstration:—Dr. T. R. C. Whipham: Selected Cases of Children's Disease.

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patients (Dr. A. J. Whiting); Surgical Out-patients (Mr. Carson); Radiography (Dr. Metcalfe). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

FRIDAY.—2.30 P.M., Surgical Operations (Mr. Howell Evans). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. E. Gillespie); Eye Out-patients (Mr. R. P. Brooks).

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M. Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

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Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1915, which is completed with the issue of to-day, will be given in the next number of THE LANCET

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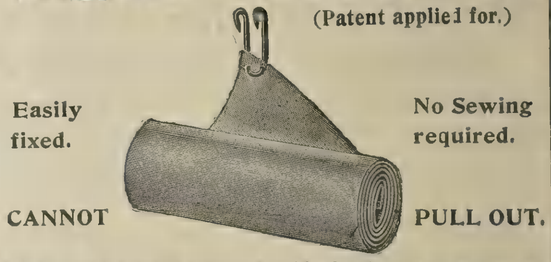
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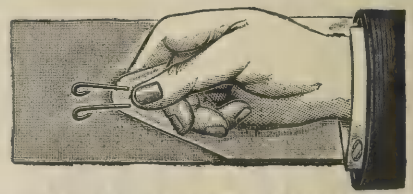

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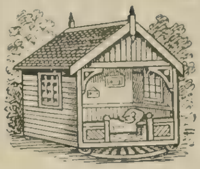

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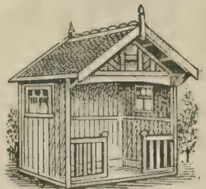

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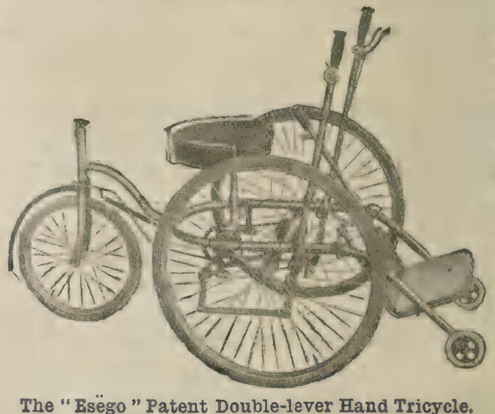

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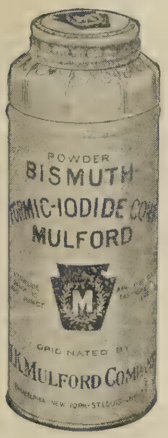

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SOUTHALL BROS. & BARCLAY, Ltd., BIRMINGHAM.

Vitafer Chocolate

In Tablets containing 10 per cent. of Vitafer.

A delicious confection and a genuine stimulant.

Specially intended for travellers, sportsmen, and busy men and women who require a pick-me-up between irregular meals.

It is also ideal for Soldiers at the front, on the march, in training, etc.

In 6d. and 1/- packets of 12 and 24 tablets.

Rheumatism—Gout—Lithiasis—
Sciatica—Eczema—and Obesity

Of special value in ARTERIO-SCLEROSIS.

Urodonal

37 TIMES MORE POWERFUL THAN LITHIA.

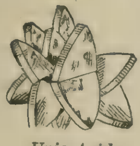
Dissolves Uric Acid, Oxalic Acid, and Xantho-Uric Bodies,

Oxidises Cholesterin, Glucose, & Fats,

Eliminates Urea and Chlorides,

and

Restores Arterial Tension to Normal



Uric Acid Crystals.

3 teaspoonfuls per day, each teaspoonful in a glass of water, taken between meals, 10 days per month.

Acute conditions: 3 dessertspoonfuls per day. No Contra-indication, and may be continued indefinitely without any inconvenience.

Uric Acid Crystals.

GOLD MEDAL, LONDON, 1908
Grand Prix, Nancy and Quito, 1909

COMMUNICATIONS:
Academy of Medicine, Paris, 10th Nov., 1908.
Academy of Sciences, Paris, 14th Dec., 1908.

URIC ACID is never found free in the organism. It always exists in a state of combination with Soda, Ammonia, &c.; it forms biurates or quadriurates, which are complex and not easily soluble.

URODONAL by reason of its special composition, is able to effect the double chemical decompositions which liberate the Uric Acid from the combinations where it is fixed, and cause it to be easily eliminated in the urine.

URODONAL is a most powerful solvent of **URIC ACID,** because it can destroy its organic combinations.

URODONAL, JUBOL, GLOBEOL, FILUDINE,
Prepared by J. L. CHATELAIN, 2 & 2 bis, rue de Valenciennes, Paris.
Can be obtained from all Chemists and Stores, or from the London and Colonial Agents,
HEPPELL & CO., Foreign Chemists, 164, Piccadilly, W.

Samples sent free to the Medical Profession on application to Heppell & Co.

A TRUSTWORTHY
UTERO-OVARIAN TONIC
AND ANODYNE

Liquor Sedans

Each fluid ounce represents:—

Viburnum Prunifolium (Black Haw)	60 grains.
Hydrastine to represent Fl. Ext. Hydrastis	30 minims.
Piscidia Piscipula (Jamaica Dogwood)	30 grains.
Aromatics	q.s.

DOSE:—½ to 1 fluid drachm in hot water several times daily.

LIQUOR SEDANS has been abundantly proved, during many years of continuous use by eminent gynæcologists in all parts of the world, to be a most efficient remedy in **amenorrhœa, dysmenorrhœa, menorrhagia, acute or chronic inflammation of the womb and ovaries, threatened miscarriage, etc.** It is often effectual in stubborn cases which have resisted other treatment.

SELECTIONS FROM CLINICAL REPORTS.

Disorders of Menstruation.

"Liquor Sedans is a useful tonic which can be given with iron or other preparations to those who are debilitated by excessive losses or suffering."

Edinburgh Medical Journal, July, 1900.

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"Milder cases of so-called endometritis often yielded to the administration during the week preceding the menses of the combination of hydrastis and viburnum prunifolium found in Liquor Sedans."

Glasgow Medical Journal, June, 1905.

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"In the treatment of cancer which is beyond the stage for operative interference, Liquor Sedans is superior to opium. In my experience, it causes a considerable diminution and sometimes an absolute cessation of pain."

New York Lancet, June, 1901.

Liquor Sedans is supplied in bottles containing 4, 8, 16, and 80 fl. ounces.
Gelatin Globules, each containing the equivalent of 1 fl. drachm of Liquor Sedans, are supplied in boxes of 12, 25, and 100.

Please specify "P., D. & Co." on all prescriptions for the above-mentioned.

Parke, Davis & Co., London, W.

Advances in Diagnosis and Treatment

Typhoid and Paratyphoid Diagnostic

As suggested by Dr. Dudgeon and used by the

Army Bacteriological Laboratories.

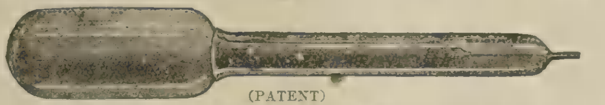
An easily prepared and thoroughly efficient medium for cultivating bacteria from the blood in cases of Typhoid and Paratyphoid Fever. The bile-salt medium is contained in gelatine capsules, one of which is dissolved in 25 c.c. of distilled water, sterilised, and mixed with 10 c.c. of blood drawn directly from a vein.

Typho-diagnostic Capsules, sufficient for 12 tests, with full description of technique - 3/- per box.

"Hyposol" Vacuum Extractor

(Trade Mark)

For collecting samples of blood, etc., under ideal conditions of sterility and directly into the culture fluid.



(PATENT)

The apparatus consists of a vacuum bulb suitably connected with a needle, so that on breaking the neck of the bulb within the india-rubber tube blood can be drawn from a vein, or other fluid collected under absolutely sterile conditions.

The following forms are supplied :

No. 1—25 c.c. total capacity ; to take up 10 c.c. of fluid - -	1/3 each
No. 2—25 c.c. : vacuum 10 c.c. ; containing 1 c.c. Citrate solution	1/3 each
No. 3—25 c.c. : vacuum 10 c.c. ; with glass beads - - -	1/6 each
No. 4—65 c.c. total capacity containing 50 c.c. nutrient bouillon with a 10 c.c. vacuum - - - - - - -	2/6 each
No. 5—50 c.c. total capacity containing 25 c.c. bile-salt solution with a 10 c.c. vacuum (for diagnosis of Typhoid and Paratyphoid Fever) - - - - - - -	2/- each

"Hyposol" Vacuum Extractors containing other culture fluids are prepared specially to order.

Allen & Hanburys Ltd., London

West End House:
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TRADE MARK
A.D. 1715

'Bynin' Amara

TRADE MARK

FORMULA:

Quinine Phosphate	$1\frac{1}{2}$ grains.
Iron Phosphate	2 ,,
Nux Vomica Alkaloids (equal to Strychnine)	$\frac{1}{16}$ grain.
"Bynin," Liquid Malt	1 ounce.

"A distinct advance on Easton's Syrup"

THE LANCET.

"Bynin" Amara

is an analogue of Easton's Syrup, over which it has, however, marked advantages. In this product, "Bynin," a pure, nutritious, and highly active Liquid Malt, supersedes the inert basis of the official preparation.

"Bynin" Amara

is vastly superior to Easton's Syrup; the dose can be regulated with exactness; the digestive organs are reinforced and the system is invigorated by its powerful tonic action. It not only assists the digestion of food, but conserves and ensures complete assimilation.

Explanatory Pamphlet and Sample Free to Medical Men.

Allen & Hanburys Ltd.,
Lombard St., London.

Niagara Falls, N.Y. Toronto. Buenos Aires. Durban. Sydney.

The Dietetic Treatment of Disease.

The 'Allenburys' DIET

Invaluable in Sickness and Convalescence.

MEDICAL TESTIMONY

The following unsolicited testimonials illustrate the value of the 'Allenburys' Diet.

Obstinate Vomiting

"I used your Diet with **complete success in a case of most intractable vomiting, it being the first and only substance which the patient retained;** but after its use for a few days she was able to ascend the dietary scale in a steady rise.

. . . . House Surgeon.

Dyspepsia and Old Age

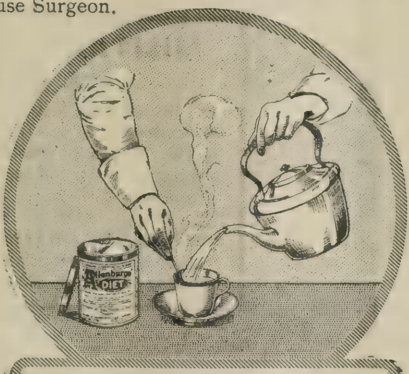
"Please send me by return (as the case I require it for is a very urgent one) six tins of Diet. I have found it **most beneficial in a case of an aged dyspeptic,** and I shall have much pleasure in recommending it wherever possible.

. . . . M.D.

An Intractable Gastric Case

"I may say that I tried, with very great success, your Diet on an intractable gastric and intestinal case. **I verily believe it was the means of saving the man's life,** for he could digest nothing until I gave him **your Diet, which speedily brought him round, and enabled him to tide over a very critical period of his ailment.** I certainly consider the nutritious qualities of your Diet to be of a high order."

. . . . . . M.B.



MADE IMMEDIATELY BY ADDING BOILING WATER ONLY

A Valuable Evening Meal

"I used it with a patient I had under close observation, **the result was marvellous.** She has now had three large tins, and **has not been so well for some years.** I gave it only at night, an hour before bedtime, and **though only taken once in twenty-four hours she has gained over six pounds in weight,** while previously she was losing daily. It certainly is **a most satisfactory preparation."**

L.R.C.P., L.R.C.S.

Excellent for the Gouty

"I am using it myself and find it a good food. I think it is an **excellent supper dish for a gouty man, and I sleep well** after taking it."

. . . . . . M.D.

Promotes Refreshing Sleep

"I have used the "Allenburys" Diet at night with considerable benefit. I find it **sustaining and comforting,** and **sleep much better** after taking it."

. . . . . . M.D. (Lond.)

Quite *distinct* from the "Allenburys" Foods for Infants.

The "Allenburys" DIET is made from pure, rich full-cream milk and whole wheat, both ingredients being partially pancreatised during the process of manufacture. The "Allenburys" DIET is a complete food chiefly intended for Adults, and is an essential nutrient for **Invalids, Dyspeptics** and **the Aged.** It is quickly prepared, exceptionally palatable, easily digested, and wholly nourishing.

Prices: In tins at 1/6, 3/- and 6/- each. A large sample sent free on request.

ALLEN & HANBURYS LTD., Lombard Street, LONDON.

GLYCO-THYMOLINE

IN

WAR

SURGERY

MILITARY HOSPITAL,
No. 31 Bis.

Soldier of Line Regiment, 35 years old, wounded by expanding bullet. Treated with Glyco-Thymoline. Pockets syringed with Glyco-Thymoline, full strength and hot, then compresses of 25% solution Glyco-Thymoline applied. Dressed thus every six hours; where pus was present pockets previously cleaned with Eau Oxygenée.

SAME HOSPITAL

Same soldier after nine weeks' treatment. Wound almost cicatrised and articulation normal.

KRESS & OWEN CO.

361-362, PEARL ST., NEW YORK.

SAMPLE

FREE

OF ALL COST

FROM

Thos. CHRISTY & Co.

4-12, Old Swan Lane,

LONDON.

SOLE AGENTS FOR GT. BRITAIN.

"MALTINE"
with PEPSIN and PANCREATIN.

Each Fluid Ounce contains of PEPSIN equivalent to 40 grains SACCH. PEPSIN and 15 grains of PANCREATIN.

DOSE.—From a Dessertspoonful to a Tablespoonful after meals.

A COMPLETE PTYALYTIC, PEPTIC, and INTESTINAL DIGESTANT.

The Pancreatin in this preparation is specially resistant to acid action, and is not, therefore, destroyed in the stomach during Peptic digestion, but becomes active in the alkaline contents of the small intestine.

LIST OF "MALTINE" PREPARATIONS.

"MALTINE" Plain.
"MALTINE" with IRON.
"MALTINE" with PEPSIN and PANCREATIN.
"MALTINE" with PHOSPHATES.
"MALTINE" with CASCARA SAGRADA.
"MALTINE" with COD LIVER OIL.
"MALTINE" with HYPOPHOSPHITES.
"MALTINE" with CREOSOTE.
"MALTO-YERBINE."
"MALTINE" with PHOS. IRON, QUIN. & STRYCH.

THE MALTINE MANUFACTURING COMPANY, Limited,
183, ACTON VALE, LONDON, W.,
Will be pleased to send Specimens Free of Charge to Medical Men.

The word "MALTINE" is our Trade Mark.
In ordering, kindly specify "**MALTINE COMPANY.**"

"DRY PEPTONOIDS" SOLUBLE (Carnrick & Co.)

Beef, Milk, and Wheat, Pre-digested,

presents an easily assimilated, highly concentrated, and well-balanced food. It contains 40 per cent. of protein in the form of peptones and albumoses and 47 per cent. of carbohydrates in the form of lactose, dextrose, and maltose. "DRY PEPTONOIDS" SOLUBLE is Palatable, easily administered, being soluble to a diffusible solution in all ordinary fluid media, and is completely absorbed. It is indicated as a nutrient in Gastro-Intestinal Disease, after Crisis, during Convalescence, and in all cases of Weak Digestion.

CARNRICK & CO., Limited, 183, Acton Vale, London, W.,
Will be pleased to send Samples and Literature Free of Charge to Medical Men.

'OXYNTIN'

HYDROCHLORIC ACID COMBINED WITH ALBUMIN.

Oxyntin contains 5 % by weight of Hydrochloric Acid (absolute HCl.), in combination with albumin, the acid loosely bound to the protein. Ten grains of the Oxyntin therefore represent 5 minims of Acidi Hydrochlor dil. B.P.

Oxyntin is readily miscible with water, to which it imparts but a slightly acidulous taste, markedly devoid of the characteristics of even largely diluted free hydrochloric acid. Oxyntin therefore presents an extremely convenient means of administering hydrochloric acid in pernicious anæmia and disorders of digestion where the object is to increase the acid-percentage of the gastric content.

DOSE: 5 to 15 grains.

Supplied to the Medical Profession in 1 oz. bottles at 2/6 each.

'ENZYMOL'

A SURGICAL SOLVENT AND ANTISEPTIC.

AN EXTRACT OF THE GASTRIC GLAND OBTAINED BY DIRECT SOLUTION, ESPECIALLY PREPARED FOR EXTERNAL APPLICATION.

'Enzymol' dissolves all septic matter, corrects offensive odours, and imparts a healthy stimulus to the affected surface.

'Enzymol' is potent and entirely painless as a solvent, and is without action upon the normal tissue. It may be freely applied to all surfaces and cavities from which it is desired to remove dead tissue, pus, etc. 'Enzymol' will be found successful as a solvent in affections of the aural and nasal cavities, for dissolving coagula in the bladder, etc.

'Enzymol' is now being used on soldiers whose wounds are difficult to heal, especially those men who have foul smelling wounds.

'Enzymol,' simply by physiological action, converts morbid tissue and pus into a soluble form, which is thus readily removed by the ordinary methods of irrigation or washing.

Supplied to the Medical Profession in 4 oz. bottles, at 2/2 each.

Manufactured by
Fairchild Bros. & Foster,
NEW YORK
and 64/65, HOLBORN VIADUCT, LONDON, E.C.

Agents for Europe, Asia, Africa, & Australasia:
Burroughs Wellcome & Co.,
LONDON, SYDNEY, CAPE TOWN.

TEXTURÆ ANTIQUÆ, 145—CARTHAGINIAN

TRADE MARK **'WELLCOME'** BRAND

Adrenalin, B.P.

(British-made by Burroughs Wellcome & Co.)

IN HAY FEVER

Excellent results are obtained with applications of solutions and other suitable preparations of Adrenalin to the nasal passages and the eyes.

In addition to being B.P., 'Wellcome' Brand Adrenalin is physiologically standardised.

SELECTED PREPARATIONS:—

'Wellcome' Brand Adrenalin, B.P.
In tubes of gr. 1 (0·065 gm.), at 4/0 per tube

'Wellcome' Brand Solution of Adrenalin, B.P.
In bottles of 10 c.c., at 1/4 per bottle

'Tabloid,' 'Soloid,' 'Enule' and 'Vaporole' Brand products are also issued.

TRADE MARK **'SOLOID'** BRAND

Products

FOR NASAL ADMINISTRATION

A series of combinations of antiseptics, local anæsthetics, astringents, etc. The patient prepares douche or spray by dissolving the product in water.

For list, see Wellcome's Medical Diary

Compound Menthol Snuff B. W. & Co.

Possesses hæmostatic, stimulating antiseptic and local anæsthetic properties.

A uniform and practically impalpable powder.

Supplied in enamelled metal boxes for purse or vest pocket at 6d. each

BURROUGHS WELLCOME & CO.
LONDON

All communications intended for the Head Office should be addressed to
SNOW HILL BUILDINGS, LONDON, E.C.

London Exhibition Room: 54, Wigmore Street, W.

Carthaginian mosaic portrait of Virgil, in glass and marble tesseræ. The poet holds on his knee a roll of papyrus, inscribed with lines from the Æneid. On his right stands Clio, the Muse of History; on his left, Melpomene with a tragic mask. The page-decoration is copied from the embroidery on the girdle or sash of Melpomene. Date, circa A.D. 200-400.

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Lysol

of all manufactures

completely Superseded by an ALL-BRITISH Antiseptic certified of Higher Disinfecting Value

TOXOL

Manufactured by Boots Pure Drug Co., Ltd.

Responding to the desire of the Medical Profession to discard preparations paying tribute to the enemies of this country, the laboratory staff of Boots, *the* Chemists (consisting of some 30 highly-trained analysts), perfected TOXOL, which is identical in all but name with "Lysol" as formerly imported from Herren Schulke & Mayr of Hamburg—a solution of cresols in a saponaceous medium—and superior in strength of disinfecting power.

TOXOL is pronounced by medical men who are using it to have all the qualities of "Lysol," and is certified on high authority to excel *all* samples of "Lysol" in disinfecting co-efficient.

Copy of Report by Dr. SAMUEL RIDEAL, joint-originator of the RIDEAL-WALKER Co-efficiency Test. November 16, 1914.

"I have purchased at one of your branches samples of TOXOL, and my results on examination confirm your labelled strength that it is two and a half times as powerful as Phenol, and it is higher than all samples of 'Lysol' I have examined." *(Signed)* SAMUEL RIDEAL.

The following are extracts from the letters of Medical Men who have already used TOXOL to replace "Lysol":—

"It seems to be in every way quite satisfactory and an excellent substitute for 'Lysol.'"

"Very glad to test and prove that English science is as good as that of the Barbarians. It would be a good thing to circularise the profession with a list of alien enemies' products."

"I tried it on a septic finger and found it all you stated it to be."

"TOXOL is very satisfactory. The medical profession ought to feel grateful to Sir Jesse Boot for replacing a German article in such a prompt and satisfactory manner."

"Am using sample and I am so pleased with it that I shall continue to use TOXOL in future."

"An excellent preparation. I obtained 'Lysol' many times from Hamburg before any English chemist would stock it, so am interested in your venture."

"Dr. —— is pleased to see an English manufacturer superseding a German product, and he will give his support to such a company as will do this."

"Many thanks; have used solutions of TOXOL in various strengths for numerous minor surgical cases with most satisfactory results."

"Will give TOXOL a trial. Am much interested in finding that your firm has succeeded in making a preparation in England of a German make like 'Lysol.' It is much more efficient than the German."

"Superior to 'Lysol' as far as I have tried it."

Samples of TOXOL will be delivered free on application to Medical Men who have not yet tested it.

TOXOL is sold in 6½d., 11d., 1s. 7d., *and* 2s. 9d. *bottles at all branches of*
Sent carriage paid to any Medical Man at above prices; address Boots, M. O. Nottingham.

Special Bulk Terms to Hospitals and Institutions.

Boots

THE WAR AND CARDIAC THERAPY

THE President of the General Medical Council recently called attention to the great shortage of Doctors and Nurses owing to the War.

How does this shortage affect Cardiac Therapy?

1. The busy, and often overworked, practitioner is with the greatest difficulty able to devote the same time and attention to the case as in pre-war times.
2. Owing to many Continental Spas being closed to the British visitor, Home Hydros are overcrowded and only at the disposal of a limited number of patients.
3. The enormously increased demands on Nursing Homes have placed them out of the question for patients of moderate means.

Under these circumstances, the busy medical practitioner will find it convenient to fall back upon Digitalis Medication and Home Treatment to safeguard the patient from recurring attacks of Asystole.

Digitalis Medication is a safe and practical method of preventive treatment well within the means of every patient.

Recent advances in Cardiac Pathology have drawn attention to the fact that if an Invariable preparation of Digitaline be given to a patient whose heart is comparatively regular, no untoward results occur; on the contrary, the Cardio-vascular system will be braced up, attacks of heart failure warded off, and the comfort of the patient so much increased that complaints will be made should the treatment be interrupted for any length of time.

The great difficulty of Digitalis Medication lies in the choice of a standard preparation of invariable dosage, for it is essential that the physiological activity of the drug taken by the patient should be known. Most preparations, especially the Tinctures, vary in strength.

Nativelle's Digitaline is a definite and invariable preparation which overcomes all difficulties, and as it is supplied in the form of small granules, it is most convenient. This preparation has been for many years one of the best known Cardiac remedies, a practical proof of the value of the drug.

The chemical reactions of Nativelle's Crystallised Digitaline are similar to those of Digitoxine of the French Codex, and whereas Digitoxine is anhydrous, Nativelle's Crystallised Digitaline is a hydrated derivative; it is less toxic than Digitoxine and its action is quicker and more regular.

Nativelle's Crystallised Digitaline is assayed physiologically, which accounts for the uniform results obtained by its use in therapeutics.

While small doses of Digitalis have no appreciable action on the healthy cardiac muscle, they have a very decided tonic effect on the failing heart.

It will be found by experience that the dose of Nativelle's Digitaline required varies with the individual. Some patients will remain perfectly comfortable on one granule of 1/600th of a grain every third night, others will require a granule every other night, or even every night.

In each case the minimum dose required to keep the patient comfortable should be ascertained, and once this has been learnt the treatment may be continued with very little alteration for months.

If this be done, the patient who has seemed, during an attack of asystole, to be in the very jaws of death, returns to a state of comparative health.

The symptoms, so distressing both to the patient and to his friends, abate, the rapid irregular pulse is steadied, diuresis increases, the œdema disappears, the dyspnœa vanishes, and the cyanosed lips regain their normal hue.

A Sample of these Granules will be sent free to any registered member of the Medical Profession on demand. Also particulars of other uses and doses of Nativelle's Digitaline.

NATIVELLE AGENCY,
49, Haymarket, LONDON, S.W.

"SANITAS"

"**SANITAS FLUID**," for Washing the Sick, Dressing Wounds, Mouth and Throat Wash, Purifying the Air, and Spraying Sick Rooms. (Sprays 3/- each.)

"**SANITAS OIL**," for Inhalations in Lung and Throat Trouble.

"**SANITAS-SYPOL**"—an improved Lysol.
Makes a Clear and Bright Solution for Antiseptic Surgery.

"**SANITAS-OKOL**" (EMULSION)
"**SANITAS-BACTOX**" (HOMOGENEOUS)
Being 20 times the strength of Pure Carbolic Acid, these Disinfectants admit of great dilution for general use.

"**SANITAS POWDER**," for Dry Disinfection—much stronger than Carbolic Powders.

"**SANITAS" SOAPS**, Hard, Soft, Toilet and Animal.

"**SANITAS SULPHUR CANDLES**," for Fumigation.

"**SANITAS FORMITAS OUTFITS**," for Formic Fumigation.

"**SANITAS" POLISHES** (DISINFECTANT), for Floors and Furniture and for Hospitals, Workhouses, &c.

"**PEROXIDE OF HYDROGEN**" (Kingzett's Patent Preserved Quality).

The "SANITAS" CO., Ltd.,
LIMEHOUSE, LONDON, E.,
Disinfectant Manufacturers, by Appointment, to H.M. THE KING.

GOLD MEDAL, INTERNATIONAL CONGRESS OF MEDICINE, LONDON, 1913.

MIST. DAMIANÆ CO. (HEWLETT'S).

MIST. DAMIANÆ CO. (Hewlett's) will be found to possess all the properties of Damiana, viz:—Its alterative effects on the alimentary canal and tonic action upon the brain and nervous system generally. It is a well-known fact that exhaustion of the organs and tissues, neurasthenia, and premature decay, are far more prevalent at the present day than ever before. The causes are numerous and complex, but, perhaps, the principal reason is that multitudes have to toil harder with their brains than any previous race. The resulting cerebral anæmia is, therefore, one of the most general complaints in modern life. Not only is it found amongst the professional literary men, but busy merchants and overworked scholars are equally the subjects of enfeebled nerve power and deficient vitality.

In all these various forms of loss of nerve power MIST. DAMIANÆ CO. (Hewlett's) is a powerful remedy, relieving the exhaustion and conferring renewed capacity for mental and physical endurance.

As a nerve tonic and brain stimulant it is unequalled, and its invigorating properties will be found invaluable in many diseases where there is great depression and exhaustion. In paraplegia, hemiplegia, and partial paralysis, it is particularly indicated, and may be suitably and satisfactorily employed wherever a powerful nerve stimulant and restorative are required.

Dose—One or Two Drachms in Water.

MEDICAL OPINIONS.

"I have tried your Mist. Damianæ Co. considerably in the dyspepsia of commencing phthisis, and can very strongly recommend its use in those cases. It soothes the stomach wonderfully, and enables the patient to take more food whilst acting as a powerful stimulant in relieving exhaustion."—Yours faithfully, W. H. B——, B.A. (Cantab.), M.R.C.S., L.S.A.

THE MEDICAL ANNUAL.—"Damianæ is not used so frequently in this country as in America, where its value as a tonic for Neurasthenia is well known. Messrs. HEWLETT & SON put up a very excellent preparation of this drug, combined with Nux Vomica and simple aromatics and bitters, which is valuable for dispensing, and yields very satisfactory results in treatment."—1898.

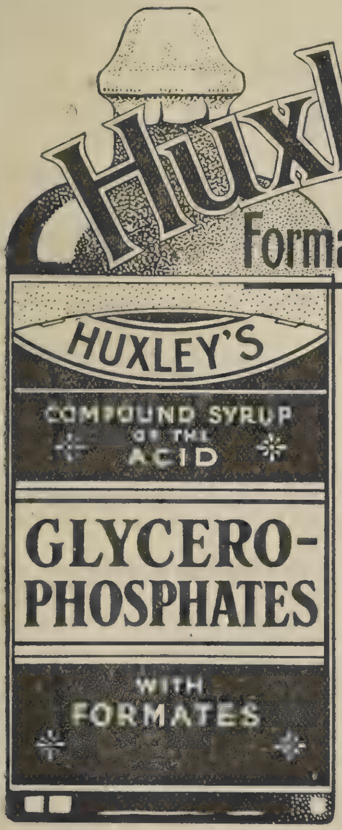
Dr. M——, R.N., writes:— "Farnham (Hants.), Sept. 1903.

"I have frequently prescribed your Mist. Damianæ Co. and proved it efficient in treating Neurasthenia."

PRICE 11/- per lb. Packed in 10-oz., 22-oz., 40-oz., and 90-oz. Bottles.

Introduced and Prepared only by—

C. J. HEWLETT & SON, LTD., 35 to 42, Charlotte St., LONDON, E.C.



Huxley's Syrup

Formates with Glycero-Phosphates

A bright cherry-coloured syrup, flavoured with Seville orange peel.

Contains:—Acid Glycero-phosphates and Formates of Lime, Soda, Potash, Iron, and Manganese (5 grains in 1 drachm) **with** *or* **without** *Strychnine Glycero-Phosph.* $\frac{1}{120}$*-gr.*

The Formates have general tonic and stimulant effects, especially noticeable when used in conjunction with the glycero-phosphates in

NEURASTHENOID or NEURASTHENIC STATES

or in abnormal fatigue from over-exertion, mental or physical.

Original bottles, ½-lb. or 1-lb. Free sample to Profession.

ANGLO-AMERICAN PHARMACEUTICAL COMPANY, Ltd., Croydon.

Bananina

A NATURAL Health Food, Highly Nutritive, Easily Digested

There can be no doubt of the nutritious character of Banana Flour. The starch in it is peculiarly easy of solution and digestion in the alkaline digestive juices of the body. Banana Flour is readily dissolved, for example, by saliva. It is eminently the food **for those of weak or impaired digestion.**

"BANANINA" possesses all the properties of Perfect Food combined with pleasant appearance and flavour when made up as directed. It contains the requisite amount of Nitrogen Carbon Fats and Mineral Salts in a form easy of digestion and assimilation.

"BANANINA" is richer in proteid than Foods with Wheat Flour as a basis, and it also contains more fatty matter, consequently its nutritive value is decidedly higher than that of Wheaten Flour.

As a source of energy and material for tissue repair, **"BANANINA"** stands above all other foods. By reason of its fruity nature it is anti-scorbutic. When prepared as per directions it is a **pre-digested** food for infants.

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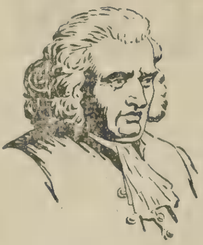

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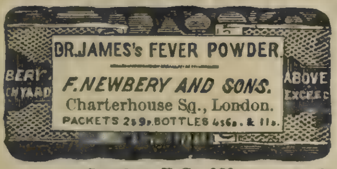
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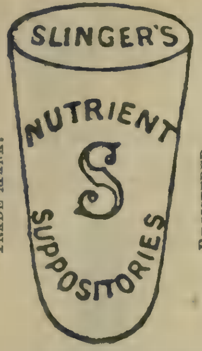

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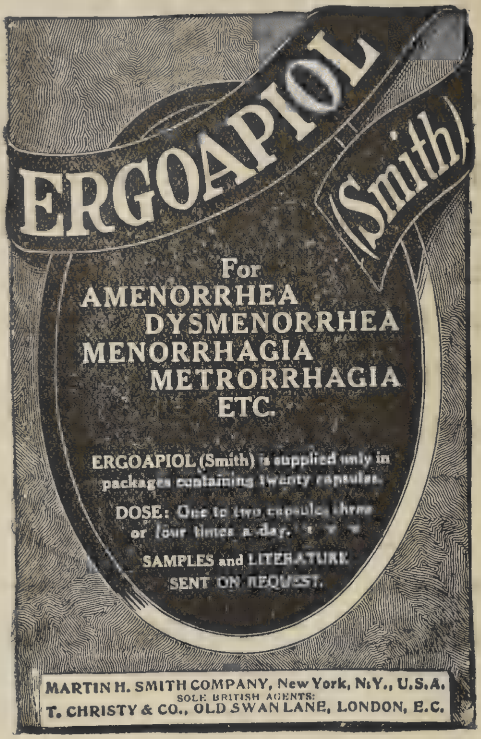

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Alcohol and Drug Inebriety and Neurasthenia.

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(Under the direction of an Advisory Council of eminent Medical Men.)

NEURASTHENIA is treated on approved principles, and there are Open-air Shelters in the grounds for suitable cases.

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Thirty years' Experience. Excellent Medical References.

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For further information apply to the Director, Dr. McDougall, Warford, near Alderley Edge, Cheshire.

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Under the Management of the Committee of the David Lewis Colony.

Home Life, Medical Care, and suitable Education for Boys subject to Epilepsy. Terms 30s. weekly. Further particulars may be obtained rom Dr. ALAN McDOUGALL, The Colony, Alderley Edge.

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Candidates, who must possess registered qualifications, should forward applications, stating age, qualifications, and experience, together with copies of three recent testimonials, to the undersigned.

FRANK INCH, Secretary.

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Applications, stating age, qualifications, &c., to be sent to the Medical Superintendent.

Hospital and Public Health Authorities willing to consider the applications of Belgian Medical Men are invited to communicate with the Editor of The Lancet, 423, Strand, W.C.

Borough Hospital, Birkenhead.—Wanted, HOUSE SURGEON (Male or Female). Salary £300 per annum, with board and laundry.

Apply, with testimonials, to the Secretary at the Hospital.

Nottingham General Hospital.—Wanted, a SENIOR HOUSE PHYSICIAN. Salary at the rate of £300 per annum, with board, residence, and laundry in the Hospital.

Applications, stating age, with testimonials, to be addressed to the Secretary. By order. E. M. KEELY, Secretary.

Nottingham General Hospital.—Wanted, an ASSISTANT HOUSE PHYSICIAN. Salary at the rate of £250 per annum, with board, residence, and laundry in the Hospital.

Applications, stating age, with testimonials, to be addressed to the Secretary. By order. E. M. KEELY, Secretary.

Royal Victoria Hospital, Folkestone.—HOUSE SURGEON required immediately. Beds: 50 civilian and 50 to 100 for wounded soldiers. Board, residence, and laundry found. State fully essential particulars, with three recent testimonials, to the Secretary as above.

Stockport Infirmary. — Wanted, a SENIOR HOUSE SURGEON. Must be fully qualified and registered. Salary £200 per annum, with board, washing, and residence.

Applications, stating age and nationality, with testimonials, to be sent to the Secretary.

West Ham and Eastern General HOSPITAL. — Wanted at once, RESIDENT MEDICAL OFFICER. Salary £160 per annum. Also HOUSE PHYSICIANS and HOUSE SURGEONS. Salaries £120 and £100 per annum, with board, residence, and washing. Applications, with copies of testimonials, should be sent to the undersigned, from whom particulars can be obtained. A. W. SCRIVENER, Secretary.

Carlisle Non-Provident Dispensary.—RESIDENT MEDICAL OFFICER required immediately. Salary £200 per annum, with apartments (not board). Suitable post for applicant who desires to work for a diploma.

Applications, with testimonials, stating age and qualifications, to be sent to the Hon. Secretary, Mr. G. A. LIGHTFOOT, 21, Castle-street. Carlisle.

The Royal National Hospital for CONSUMPTION and DISEASES of the CHEST, Ventnor, Isle of Wight.—A vacancy in the post of ASSISTANT RESIDENT MEDICAL OFFICER has occurred. The appointment is open to Ladies. Particulars may be had upon application to the Secretary, 18, Buckingham-street, Strand, London, W.C.

Scarborough Hospital and Dispensary.—Wanted, SENIOR and JUNIOR HOUSE SURGEONS. Salary £100 and £80 per annum respectively, with board, residence, and allowance for laundry.

Applications, with testimonials, to be sent to the Honorary Secretary from whom further particulars may be obtained.

W. SAYNER, Hon. Secretary

Bristol Royal Infirmary.—An ASSISTANT is required to the Ear, Throat, and Nose Department. The post, which is Non-resident, might be held by a Woman with experience in this specialty. Candidates must possess registered Medical and Surgical qualifications.

For salary and other particulars apply,

11th June, 1915. W. E. BUDGETT, Secretary and House Governor.

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Swansea General and Eye Hospital (172 beds).—HOUSE PHYSICIAN (Lady or Gentleman) wanted, who will also act as Ophthalmic House Surgeon. Salary £200, with board, apartments, and washing.

Candidates, who must be fully qualified, to send their applications, with three testimonials (typewritten copies preferred) to the undersigned.

May 17th, 1915. W. D. HUGHES, Secretary.

Royal Albert Edward Infirmary and DISPENSARY, Wigan.—Wanted, a JUNIOR HOUSE SURGEON (either sex). Salary £150 per annum, with board, apartments, and washing. Candidates must be doubly qualified and registered, and prepared to enter into an agreement not to practise in the Wigan Union for a period of three years from the date of appointment.

Applications, stating age, experience, and qualifications, with three recent testimonials, to reach the undersigned at once.

Canvassing a disqualification.

May 10th, 1915. L. E. MAPEI, Acting Secretary.

Birmingham General Dispensary.—RESIDENT MEDICAL OFFICER, for one of the seven branches of this Institution, required at once. Must be unmarried, registered, and possess Medical and Surgical qualifications. Commencing salary £250 per annum, with furnished apartments, fire, lights, and attendance. No Midwifery cases. LADIES MAY APPLY.

Applications, together with copies of three recent testimonials and registration certificate, should be forwarded to the undersigned (from whom any further particulars can be obtained) at the earliest possible date.

32, Union-street. ERNEST W. FORREST, Secretary.

Salisbury (General) Infirmary (120 beds).—Wanted at once, HOUSE SURGEON and ASSISTANT HOUSE SURGEON. Salary £150 and £100 respectively, with apartments, board, lodging, and washing. Candidates must be unmarried, fully qualified, and registered.

Applications from women candidates will be considered.

All applications, with testimonials, to be sent to the undersigned, of whom the rules relative to the duties may be had on application.

The duties will commence from the date of appointment.

Canvassing by or on behalf of the candidates will disqualify.

Dated 18th May, 1915. S. BUCHANAN SMITH, Secretary.

National Hospital for Diseases of the HEART, Westmoreland-street, W.—The Committee of Management invites applications for the post of RESIDENT MEDICAL OFFICER (Male or Female). The appointment is for a period of six months from 1st August next, but may be renewed for a further period of six months. Salary at the rate of £80 per annum, with board, residence, and washing. Candidates must be duly registered medical practitioners. They are not required to call upon the Medical Staff, but are expected to attend the meeting of the Medical Committee.

Applications, stating age and accompanied by copies of three recent testimonials, should be addressed to me not later than July 10th next.

ROBERT G. E. WHITNEY, Secretary.

Bury Infirmary.—Wanted, a Senior HOUSE SURGEON. Must have both Medical and Surgical qualifications. Salary £175 per annum, with board, residence, and washing. Terms of appointment not exceeding nine months.

Also a JUNIOR HOUSE SURGEON, who must have both Medical and Surgical qualifications. Salary £150 per annum, with board, residence, and washing. Among other duties the person appointed will have charge of the Children's Ward, the Ophthalmic Department, Casualty and Out-patients' Departments, and the Administration of Anæsthetics. Terms of appointment not exceeding nine months, then eligible for the Senior House Surgeon's post if suitable.

Applications, stating age and nationality, with testimonials, to be sent at once to the Honorary Secretary, Infirmary, Bury, Lancs.

West Bromwich and District Hospital (86 beds. Out-patient attendances 36,000).—Wanted, HOUSE SURGEON and ASSISTANT HOUSE SURGEON for this Institution. Candidates must be doubly qualified, duly registered, and unmarried.

Salary: House Surgeon, £150 per annum; Assistant House Surgeon, £120 per annum, with residence, board, and laundry.

Applications, endorsed "House Surgeon" or "Assistant House Surgeon," as the case may be, stating age, qualifications, and previous experience, and accompanied by copies of three recent testimonials, must be sent to the Hon. Secretary, THOS. FOLEY BACHE, Esq., Churchill House, West Bromwich, immediately.

Applications from Ladies will be considered.

By order of the Board.
FRANK I. HANCOCK, Secretary.

Bolton Infirmary and Dispensary (138 beds, mostly Surgical, including Children's Wards).—Applications for the appointment of SENIOR HOUSE SURGEON are invited from Ladies or Gentlemen having a registered Medical and Surgical qualification. Salary £230 per annum, with apartments, board, and attendance.

The appointment will be made on the 1st July, 1915, at 4 o'clock in the afternoon, when selected candidates, to whom notice will be sent, and whose third-class railway fares will be paid, are to be in attendance.

Applications, stating age, with copies of not more than three testimonials of recent date, to be addressed to the Secretary, Bolton Infirmary, not later than the 29th June, 1915.

The Royal Sea-Bathing Hospital for SURGICAL TUBERCULOSIS, Margate. — RESIDENT SURGEON required.

Candidates for the post must be legally qualified and registered. The salary is at the rate of £150 per annum for the first six months, and at the rate of £200 per annum for a second period of six months, with board, residence, and laundry. There are 200 beds, 50 of which are reserved for wounded soldiers. Special opportunities are afforded for the study of tuberculous disease.

Applications, stating age, previous appointments, with copies of three recent testimonials, should be sent to the Secretary, Royal Sea-Bathing Hospital Offices, 13, Charing Cross, London, S.W.

King Edward VII. Hospital, Windsor.—Required at once. HOUSE SURGEON at above Hospital. Salary £100 per annum, with board, apartments, and washing.

Apply to G. W. GOWER, Secretary.

Wanted, Temporary Assistant Medical OFFICER. Salary £6 6s. per week, with apartments, board, attendance, and washing. Applications and testimonials to be sent as soon as possible to the Medical Superintendent, COUNTY ASYLUM, Rainhill, near Liverpool.

Locum Tenens required at Stannington ASYLUM, Newcastle-on-Tyne, on 17th July. Six guineas, with board, &c., and railway expenses. Apply to the Medical Superintendent.

St. Mark's Hospital for Cancer, FISTULA, and other DISEASES of the RECTUM, City-road, E.C.—HOUSE SURGEON wanted. Must be doubly qualified. Salary £100 per annum, board, lodging, and washing. Applications, with copies of three recent testimonials, to be forwarded to the Secretary, at the Hospital, on or before the 17th July.

The South London Hospital for WOMEN (Incorporated).—The Board of Management invite applications from qualified Medical Women for the post of ANÆSTHETIST to the Hospital. Honorarium given. Full particulars may be obtained from the Secretary.

Applications, with copies of testimonials, to reach the Secretary, 88–90, Newington-causeway, S.E., not later than July 3rd.

Royal Surrey County Hospital, Guildford.—Wanted at once, a HOUSE SURGEON. Salary £150, with board, residence, and laundry.

The Hospital has 110 beds and a Red Cross annexe of 100 beds for wounded soldiers.

Applications, with copies of testimonials, to be sent to the Secretary at the Hospital.

Tunbridge Wells General Hospital.—Wanted, a HOUSE SURGEON, unmarried, Male, fully qualified. Salary £250 per annum, with board, residence, &c., in the Hospital.

The Hospital is being largely used for wounded troops.

Applications, with certificate of registration and copies of testimonials, should be sent to the undersigned without delay. The appointment to be entered upon at an early date. J. J. WEBB, Secretary.

Manchester Northern Hospital for WOMEN and CHILDREN, Park-place, Cheetham Hill-road, Manchester.—Wanted at once, a duly qualified HOUSE SURGEON. Salary, with apartments and board, £120 per annum.

The appointment is not restricted to a Male House Surgeon.

Applications, with testimonials, stating age and experience, to be sent to Mr. HUBERT TEAGUE, Secretary, 38, Barton Arcade, Manchester.

Hospital for Consumption and DISEASES of the CHEST, Brompton.—The Committee of Management invite applications for the post of HOUSE PHYSICIAN. The duties include work in the Out-patients' Department as well as in the wards. Further particulars may be obtained from the undersigned, to whom applications, with testimonials, should be addressed. The appointment is for six months, with [illegible] honorarium of 30 guineas.

Applications received from qualified women.

Brompton, June, 1915. FREDERICK WOOD, Secretary.

Assistant Resident Medical Officer.—The Committee of Management of the HOSPITAL for CONSUMPTION and DISEASES of the CHEST, Brompton, invite applications for the post of Assistant Resident Medical Officer. Salary £100 per annum, with board and residence. Candidates must be registered practitioners and must have held a resident hospital appointment for six months.

Brompton, June, 1915. FREDERICK WOOD, Secretary.

St. Mary's Hospital for Women and CHILDREN, Plaistow, London, E. (General Hospital, 42 beds.)—ASSISTANT RESIDENT MEDICAL OFFICER required immediately. Salary at the rate of £90 per annum, with board, residence, and laundry, and an honorarium of £10 on completion of six months' service.

Applications, with copies of testimonials, to be sent to the undersigned, from whom further particulars can be obtained.

1st June, 1915. A. ERNEST WILKES, Secretary.

Bristol General Hospital. — The House Committee invites applications for the post of HOUSE PHYSICIAN. Salary at the rate of £150 per annum, with board, residence, &c., provided in the house. The appointment will be for six months from August 1st next. Local applicants not necessarily preferred.

Candidates must be registered under the Medical Acts and produce testimonials of good personal character and ability, and must have had recent experience in the administration of Anæsthetics. Applications, stating age, with copies of testimonials, should be forwarded to the undersigned, from whom further particulars may be obtained.

THOMAS W. GREGG, Secretary.

Croydon Mental Hospital, Upper Warlingham, Surrey. — SECOND ASSISTANT MEDICAL OFFICER required. Salary £250 per annum, rising by annual increments of £25 to £300, with board, lodging, and laundry. The appointment is subject to the provisions of the Asylum Officers' Superannuation Act, 1909.

Applications, with copies of not more than three testimonials, to be made to the Medical Superintendent.

The Royal Infirmary, Sunderland.—Wanted, RESIDENT MEDICAL OFFICER. Candidates must be duly qualified and registered. Salary £150 per annum, with board, residence, and laundry. There are 212 beds for patients, and three Resident Medical Officers.

Applications, stating age, with copies of three recent testimonials, to be sent to the undersigned.

June 15th, 1915. THOMAS ROBINSON, Secretary.

Leeds Education Committee. — Applications are invited from fully qualified and registered Dentists for the appointment of SCHOOL DENTAL OFFICER. The person appointed will be required to devote his whole time to the service of the Education Committee. Salary £250 to £300 per annum, according to qualifications and experience.

Applications, stating age, experience, qualifications, &c., should reach the Education Offices not later than 5th July, 1915.

JAMES GRAHAM, Secretary for Education.

Education Offices, Calverley-street, Leeds.

County Borough of Warrington.—Applications invited for the appointment of Temporary ASSISTANT MEDICAL OFFICER OF HEALTH (Male or Female), who shall devote his whole time to the duties of the office. The person appointed will be required to carry out under the supervision of the Medical Officer of Health the Inspection of School Children, Bacteriological work, and such other Public Health work as may be directed during the continuance of the war.

Commencing salary £300 per annum.

Applications to be received by the undersigned not later than noon on Tuesday, July 6th, 1915.

G. W. N. JOSEPH,
Medical Officer of Health.

78, Sankey-street, Warrington.

Northumberland County Council.—CLINICAL TUBERCULOSIS MEDICAL OFFICER.—(Temporary appointment during absence of Chief Tuberculosis Officer on Foreign Service.)—Applications are invited from candidates for the appointment of temporary Clinical Tuberculosis Medical Officer. Salary £500 per annum, with reasonable travelling expenses in addition. The gentleman appointed must have had special experience in the diagnosis and treatment of Tuberculosis in Sanatoria or otherwise. He will be required to devote the whole of his time to his official duties, to reside in such place as may be determined by the Committee, and will be attached to the County Health Department, and act under the administrative direction of the County Medical Officer of Health. The appointment may be determined by one month's notice on either side.

Applications, with copies of not more than three recent testimonials, must be received not later than July 3rd, 1915, by the undersigned, from whom forms of application can be obtained.

J. W. HEMBROUGH, County Medical Officer.

The Moothall, Newcastle-on-Tyne.

Bedfordshire County Council.— School MEDICAL OFFICER.—Applications are invited for the position of Temporary School Medical Officer.

The person appointed will be required to carry out the work of the Medical Inspection of School Children as directed by Circulars 576 and 582 of the Board of Education.

The salary will be £300 per annum, with approved travelling and other incidental expenses and clerical assistance.

Applications will only be entertained from persons who are not eligible for military service.

The appointment will be terminable on one month's notice.

Applications, stating age, qualifications, and experience, together with copies of not more than three recent testimonials, must be sent to the undersigned not later than Saturday, the 10th July next, and the envelope must be endorsed "School Medical Officer."

Canvassing will be considered a disqualification.

W. W. MARKS, Clerk of the County Council.

Shire Hall, Bedford, 21st June, 1915.

Kent Education Committee.—School MEDICAL SERVICE. — SCHOOL DENTIST. — Applications are invited from fully qualified Dental Surgeons (Men or Women) for the post of Temporary Whole-time Dentist under the Committee during the absence of the permanent Dental Surgeon on Military Service.

The successful candidate will be required to devote his whole time to the duties, and will work under the supervision of the School Medical Officer. He will be required to reside in or near Maidstone.

The salary will be £250 per annum and travelling expenses. Apparatus, premises, and stationery will be provided.

Applications, stating age and full qualifications, and accompanied by copies of three recent testimonials, must be forwarded to Dr. A. Greenwood, School Medical Officer, Sessions House, Maidstone, and reach him not later than noon on Saturday, the 3rd July, 1915.

No official form of application will be issued.

Canvassing will be considered a disqualification.

By order of the Committee.

FRAS. W. CROOK, Secretary.

Sessions House, Maidstone, 16th June, 1915.

South Devon and East Cornwall HOSPITAL, Plymouth (183 beds).—The Committee invite applications for the appointments of a qualified HOUSE SURGEON (to commence duties on the 23rd June) and HOUSE PHYSICIAN (on the 17th July). Male or Female. No age limit.

Candidates, stating essential particulars (board, residence, and washing would be supplied by the Hospital), should send copies of not more than three testimonials to the undersigned.

Plymouth, 19th June, 1915. P. J. LANGDON, Secretary.

Urban District of Abersychan.— Appointment of MEDICAL OFFICER OF HEALTH.—The Urban District Council of Abersychan hereby give notice that at their meeting to be held at the Council Offices, Abersychan, on the 12th July, 1915, at 4 P.M., they will proceed to appoint a Medical Officer of Health for the district of Abersychan at a salary of £70 per annum.

The person appointed will be required to carry out the duties contained in the regulations of the Local Government Board, and will be appointed subject to the approval of such Board.

Applications to be sent to me on or before the 9th prox.

W. H. V. BYTHWAY, Clerk to the Council.

Pontypool, 21st June, 1915.

Cape Hospital Board.—Wanted, for SOMERSET HOSPITAL, Cape Town, or other Hospitals in the Peninsula, an unmarried ASSISTANT MEDICAL OFFICER to act as House Physician. Two years' engagement. Salary first year £200, second year £250, with rations and quarters. Salary to commence from date of taking up duties, 1st August; half salary during voyage. Second-class passage money advanced. The officer appointed to register in the Cape Province, for which a fee of £5 is charged. Applications, with copies of testimonials and particulars of past appointments, must be deposited not later than 4 o'clock P.M. on Friday, 2nd July, with Davis & Soper, Limited, Agents of the Cape Hospital Board, 54, St. Mary Axe, London, E.C.

22nd June, 1915.

County of London.—The London County Council invites applications from medical practitioners (Men and Women) desirous of having their names added to the panel of LECTURERS IN FIRST AID, HOME NURSING, HEALTH AND INFANT CARE, with a view to their engagement as occasion requires in classes more particularly in the south and south-east of London (including Woolwich). Salary £1 1s. a lecture of about one hour and a half in duration.

Applications must be on forms T.17 (p) to be obtained, with particulars of the appointment, by sending a stamped addressed foolscap envelope to the Education Officer, London County Council, Education Offices, Victoria Embankment, W.C., to whom they must be returned by 11 A.M. on Wednesday, 30th June, 1915. Every communication must be marked T.6 on the envelope.

Canvassing, either directly or indirectly, will disqualify an applicant.

JAMES BIRD, Clerk of the London County Council.

Education Offices, Victoria Embankment, W.C.

City of London Hospital for
DISEASES OF THE CHEST,
Victoria Park, E.
(Rail and Tram—Cambridge Heath, G.E.R.)
APPOINTMENT OF A TUBERCULOSIS OFFICER.

The Committee of the Hospital are about to appoint a Tuberculosis Officer in connexion with a Tuberculosis Dispensary for the Metropolitan Borough of Hackney. The Dispensary will be under the control of the Hospital with the exception of such administrative control as devolves on the Medical Officer of Health of the Borough of Hackney as chief administrative Tuberculosis Officer of the Hackney Municipal Tuberculosis Scheme.

Applicants must have held a resident appointment in a general hospital, and have had special experience of Diseases of the Chest and of Public Health work. Age not exceeding forty.

Salary at the rate of £500 per annum, with lunch and dinner provided, according to hours of duty. The Officer will be required to devote his whole time to the duties of the office. The appointment will be annual and determinable by three months' notice on either side.

Candidates are requested to send their applications, accompanied by copies of not more than three recent testimonials, to the undersigned on or before Tuesday, 13th July. Canvassing of the Members of the Committee of Management (except Members of the Medical Staff) is prohibited. GEORGE WATTS, Secretary.

Parish of St. Marylebone.—Appointment of First Temporary ASSISTANT MEDICAL OFFICER (Resident, Male), to take the place of the Medical Officer called to the Front, at the Infirmary, Rackham-street, Notting Hill, W.

Salary at the rate of £225 per annum, rising at the end of six months to £235 per annum, and at the end of twelve months to £250 per annum, with furnished apartments, rations, and washing; also £2 per week extra for doing work of Medical Superintendent in his absence (exclusive of odd days and week ends).

Candidates must be unmarried. Considerable off-duty time allowed. Plenty of time for reading up.

The appointment will be subject to the approval of the Local Government Board and to the provisions of the Poor-law Officers' Superannuation Act, 1896.

Applications, stating age, qualifications, and experience, accompanied by copies of not less than three recent testimonials, to be forwarded to the undersigned as soon as possible. Personal canvassing will disqualify any candidate.

Candidates are asked to apply in the first instance to the Medical Superintendent of the Infirmary, from whom all information may be obtained. By order.

HENRY T. DUDMAN, Clerk to the Board of Guardians.

Guardians' Offices, Northumberland-street, W., 22nd June, 1915.

Coventry and Warwickshire Hospital, Coventry (200 beds).—Lady or Gentleman THIRD HOUSE SURGEON required. Salary 6 guineas per week, with board and residence. Applications, stating age, qualifications, &c., to be addressed to the Secretary.

An Assistant Medical Officer (Locum Tenens) is required at QUEEN MARY'S HOSPITAL for CHILDREN, Carshalton, Surrey. Salary £6 6s. per week, with usual residential allowances. Apply to the Medical Superintendent.

Cossham Memorial Hospital, Kingswood, Bristol.—HOUSE SURGEON required, to commence duties on the 1st August. Salary £150 per annum, with board, residence, and laundry. The Hospital contains 90 beds, of which 60 are being used for military cases.

Candidates must be duly qualified and registered.

Applications, with testimonials, to be sent to the Secretary, from whom further particulars may be obtained.

County Asylum, Chester. — Third ASSISTANT MEDICAL OFFICER wanted (Ladies eligible). Must be fully qualified, duly registered, unmarried, and not more than thirty years of age.

Salary £200 per annum, with board (no liquor), lodging, and washing.

The appointment is subject to the provisions of the Asylums Officers' Superannuation Act, 1909.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be sent on or before the 12th day of July, 1915, to G. HAMILTON GRILLS, M.D., Medical Superintendent.

Warneford, Leamington, and South WARWICKSHIRE GENERAL HOSPITAL, Leamington Spa (130 beds—80 Civilian and 50 Army).—RESIDENT MEDICAL OFFICER (Second) required at once, fully qualified and registered. Salary £200 per annum, with board, residence, and laundry.

Special departments for Eye, Ear, Nose, and Throat cases.

Application, stating age and full particulars, accompanied by copies of recent testimonials, to be sent to the undersigned immediately.

N.B.—The appointment is open to Women.

June 22nd, 1915. FRED SMITH, House Governor.

Warrington Infirmary and Dispensary. —This Institution, with 104 beds, of which 36 are allotted to military patients, is urgently in need of fully qualified persons to fill the positions of SENIOR and JUNIOR HOUSE SURGEONS in consequence of the present staff having volunteered for active service.

Salary £180 and £120 per annum respectively, with board, apartments, and laundry.

Applications are invited from ladies, and should be sent at once, with copies of three recent testimonials, to

J. H. J. HAMPSON, Secretary.

Birmingham and Midland Eye HOSPITAL.—JUNIOR HOUSE SURGEON.—Applications are invited from duly qualified gentlemen for the post of Junior House Surgeon to this Hospital.

Salary £100 per annum, residence, and board, with £5 laundry allowance.

Applications, with testimonials, stating qualifications, &c., should be sent to the undersigned, from whom a copy of the regulations relative to the duties can be obtained.

Number of beds 110. Daily average attendance of out-patients 260.

J. W. PEARCE, General Superintendent and Secretary.

22nd June, 1915.

Paisley Parish Council.—Wanted, a RESIDENT HOUSE SURGEON for the Parochial Hospital, Lunatic Wards, and Poorhouse, Craw-road, Paisley.

The person appointed will also require to attend daily at the Parish Office for the purpose of examining and certifying applicants. Salary for combined duties £230 per annum, with board and apartments. Applications, with testimonials, to be lodged with the undersigned not later than 5th prox.

Paisley, 17th June, 1915. J. M. CAMPBELL, Inspector of Poor.

Wharncliffe War Hospital, Middlewood-road, Sheffield.—The Committee and Officer in Charge of the Hospital will shortly require the services of RESIDENT MEDICAL OFFICERS. Applicants must be fully qualified in Medicine and Surgery and registered.

Applications, stating age and qualifications, with copies of two recent testimonials, to be sent at once, addressed to the Officer in Charge, from whom the terms of the appointment can be obtained.

The names of selected candidates will be submitted to the War Office

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Two Medical Officers wanted immediately for Imperial Service to complete 2ND LINE (TERRITORIAL) of 1ST SOUTH MIDLAND MOUNTED BRIGADE FIELD AMBULANCE. Vacancies caused by transfer of Officers to 1st Line Unit now on Foreign Service.

The Field Ambulance is at present under canvas at Cirencester, Glos., and expect to go on Foreign Service in the immediate future.

Those desiring to join should communicate with Major D. M. SPRING, O.C., 2/1st South Midland Mounted Brigade Field Ambulance, Cirencester Camp, Glos.

Medical Officer, preferably with knowledge of Transport work, required at once as Transport Officer to 3/2ND SOUTH MIDLAND MOUNTED BRIGADE FIELD AMBULANCE. Apply, Officer Commanding, Great Missenden, Bucks.

Surgeon required for Mail Steamer leaving London for Australia 2nd July.—Apply, A. H. G., care of Streets, 30, Cornhill, London, E.C.

Surgeon wanted for Steamer (sailing about middle July) for voyage out to Bombay and back. Salary £15 per month with 10 per cent. war bonus.—Write P. 232, care of Shelley's Advertising Offices, 38, King William-street, E.C.

Ship's Surgeon. — Messrs. Elder Dempster and Co., Limited, have a few vacancies for Surgeons in their West African Service. Steamers call Madeira, Canary Islands, and West African ports. Pay £15 per month. Fees allowed for attendance on passengers. Length of voyage varies from six to ten weeks, according to particular route.—Apply, Medical Superintendent, Messrs. Elder Dempster and Co., Limited, Colonial House, Liverpool.

Locum Tenens.—No fee to Principals.—Mr. PERCIVAL TURNER has a large staff of trustworthy Gentlemen acting as Locum Tenentes, and will be happy to send them as required at short notice on application.—Address, 4, Adam-street, Adelphi, London, W.C. Telegrams: "Epsomian, London." Telephone: 3399 Central.

Locum Tenens provided.

APPLY
ARNOLD & SONS
(Surgical Instrument Manufacturers),
TRANSFER DEPARTMENT,
6, GILTSPUR STREET, LONDON, E.C.
(OPPOSITE ST. BARTHOLOMEW'S HOSPITAL).
Telegrams: "Instruments, London." Telephone: 5240 City.

Locum Tenens wanted immediately.—Mr. Percival Turner is in immediate want of several reliable Gentlemen with satisfactory credentials to fill vacancies caused by the War and otherwise.—Apply, personally if possible, to Percival Turner, 4, Adam-street, Strand, London, W.C. Telephone 3399 Central.

Locum Tenens urgently required.—Messrs. ARNOLD and SONS require several reliable gentlemen to complete their staff.—Apply, Transfer Department, 6, Giltspur-street, London, E.C. (opposite St. Bartholomew's Hospital). Telephone: 5240 City. Telegrams: "Instruments, London."

Gold Coast Colony, West Africa.—Two immediate vacancies for MEDICAL OFFICERS on Government Railway, fifty miles from Coast, for senior men with Tropical qualifications and experience. Service on the Coast six to eight months. Salary on basis of £720 per annum, and quarters. Return passage.—Apply to J. A. Reaside, Watergate House, Adelphi, W.C.

Wanted immediately (for period of war) for Group of Collieries and Iron Works in South Wales, reliable qualified SURGEON to examine and report upon injured workmen under Workmen's Compensation Acts, and give evidence in court when necessary. Apply, with full particulars, to the Secretary, Ebbw Vale Steel Iron & Coal Co., Ltd., Ebbw Vale.

Pathological Work.—The Coöperation of an experienced PATHOLOGIST is required in a small Clinical Laboratory (Private). The work would not necessarily interfere with private practice or clinical engagements. One familiar with technique would be preferred, but an earnest and reliable worker would be welcomed and a pecuniary share arranged.—Address, No. 440, THE LANCET Office, 423, Strand, W.C.

M.B., Ch.B., and a candidate for D.P.H., wants an appointment as a LOCUM or a RESIDENT in a Hospital near any University Town. Whole-time or part-time service. Disengaged in early July. Excellent testimonials of obtaining honours, and a good experience as a resident, an anæsthetist, and in X-ray work.—Address, No. 443, THE LANCET Office, 423, Strand, W.C.

Holiday Exchange.—M.D., D.P.H., Severn Valley. Large well-stocked garden, tennis court. Easy practice. Would exchange, London or Seaside, three weeks in August.—Address, No. 444, THE LANCET Office, 423, Strand, W.C.

A fully qualified Medical Student will accept PART EMPLOYMENT in Town. Previous experience.—Address, No. 442, THE LANCET Office, 423, Strand, W.C.

Lady Dispenser required 19th July. £6 per month, out-door.—Apply, with testimonials, to Dr. Martin, Chelmsford.

Wanted, Dispenser and Bookkeeper, out-door. Private practice. Permanency to suitable person.—Address, stating salary required, to No. 446, THE LANCET Office, 423, Strand, W.C.

Certificated Masseuse, Diplomée Southport Physical Training College, desires Visiting, Massage, or Remedial Work at Hospital, Surrey or London, for September. Good references. Experience.—Address, Miss Richardson, Tormead, Cranley-road, Guildford.

Medical Debts purchased outright for cash (any locality). Good price quoted on receipt of List of Debts. Ordinary collections undertaken if preferred.—Silvester, Medical Accountant, 66½, Corporation-street, Birmingham.

M.D., F.R.C.S.E., married, desires PARTNERSHIP to release man for War Service. Country Town or Suburb, with Surgical Hospital appointment preferred.—Address, No. 441, THE LANCET Office, 423, Strand, W.C.

Panel and Working-class Practice wanted to purchase, to produce £1000 a year or more. Must be situated in London, not suburbs.—Replies in strict confidence to No. 445, THE LANCET Office, 423, Strand, W.C.

Practice wanted (non-panel) in Kensington or Bayswater, by experienced well-qualified man with good panel. Would assist man retiring or away.—Address, No. 447, THE LANCET Office, 423, Strand, W.C.

Partnership.—Lady (trained nurse), proprietress of a large and beautifully furnished Convalescent Home, Bournemouth, desires to meet Lady or Gentleman (M.D. preferred but not essential) to join her. Amount of capital investment arranged at interview. Splendid prospects. Best medical support.—Confidential details from Deverell, 3, Waterloo-road, London, S.E.

For Disposal.—A really good Practice is not always to be had directly, but Mr. PERCIVAL TURNER (with thirty-six years' personal experience) can generally offer applicants something suitable on being furnished with details of their requirements. Nearly all the best Practices are Sold by him without being advertised.—Full information free of charge on application, personally or by letter, to 4, Adam-street, Adelphi, Strand, W.C.

Urgent.—Near London.—Unopposed old-established PRACTICE within twenty miles on rail. No opposition for four miles. Easily worked. Income £800 to £900, and increasing. Price only £800; £400 down.—Apply, No. 5626, care of Mr. Percival Turner, 4, Adam-street, Strand, W.C.

War Notice.—Messrs. Arnold & Sons have made special arrangements which will enable Members of the Profession who are serving as Officers at the front or whose Practices are affected by the War to transfer all their obligations, business or domestic; they are also willing to undertake and supervise all matters appertaining thereto, such as Payment of Rents, Premiums, School Fees, Allowances to Dependents, &c., and the efficient conduct of the Practices during their absence.—Address, in confidence, Arnold & Sons, Transfer Department, 6, Giltspur-street, London, E.C.

West End Practice.—No premium.—An easily worked good-class connexion, worth about £300 a year. No dispensing or panel. Fees from 5s. upwards. Excellent house in good position, rent £75. Will be given to purchaser of complete outfit of furniture, &c., as it stands valued at £500.—Apply, No. 5804, care of Mr. Percival Turner, 4, Adam-street, Strand, W.C.

Practices and Partnerships.—When purchasing either the importance of a careful investigation of the Vendor's books should be borne in mind. Messrs. LEE & MARTIN, of 93, Hall-road, Handsworth, Birmingham, have a Department specially for this work, and only Chartered Accountants are employed. Charges moderate and efficiency guaranteed.

Cornwall.—£500 a year, in Seaside Resort. Easily worked. No horse. Great scope. Rent £35. Panel about £220. Vendor retiring. Easy terms of purchase.—Apply No. 5798, care of Mr. Percival Turner, 4, Adam-street, Strand, W.C.

For Sale.—Partnership.—Half Share, worth £890 per annum in old-established mixed family country Practice, small panel, near London. Good house and garden; rent £80. Premium two years' purchase.—Apply by letter to "A," care of Messrs. Willows & Co., Ltd., 40, Aldersgate-street, E.C. No agents.

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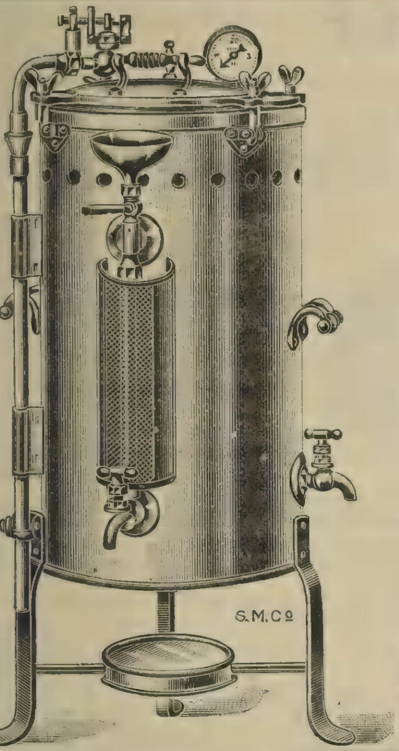

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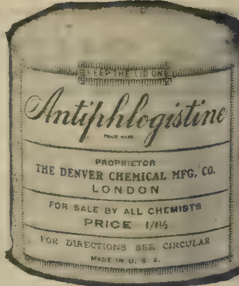

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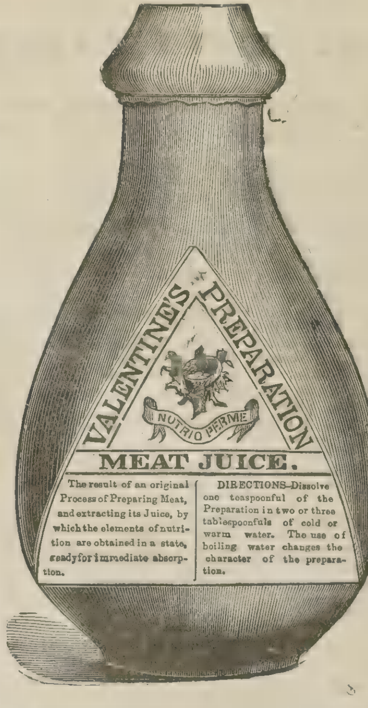
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CRESOL PASTE 20%.—A useful adjuvant especially for the deeper parts of the wound. Wounds so treated will remain aseptic.

CRESOL PASTE is supplied in "Collapsubes" of pure tin, with convenient long nozzle, per dozen 4/6. These tubes are filled at the special request of eminent Surgeons (see "Hunterian Oration," Feb. 15th, 1915), with a Pure Re-distilled Cresol in a special Ointment basis, found by bacteriological, pharmacological, and clinical trials to be the best for gunshot and shrapnel wounds.

IODINE STERILISED CAPSULES.—Many surgeons still adhere to Iodine as a first-aid treatment. Iodine Solution is not portable and cannot be so easily introduced into a cavity. To meet demand, however, we supply glass capsules completely encased in wool and absorbent casing. There is nothing complicated about our Capsules, no thinking which end to use—the directions are, smash it, use all of it.

In three forms :—1. In boxes of 8, each 2/3. 2. In metal tubes, boxes of 12 each 3/-. 3. In highly finished screw-cap white metal tubes, with a small piece of lint, per dozen 7/-.

MASTICH SOLUTION.—This has been advised by some surgeons as an antiseptic dressing to wounds. It is stated to be a harmless disinfectant by arresting the micro-organisms on the skin, &c., where applied, virtually entangling them. Its action is rapid and quite painless. For further details see the "Extra Pharmacopœia," 16th Edition, Volume I., p. 832. Original 4 oz. bottles, per dozen 36/-.

FOR THE TREATMENT OF AND THE PREVENTION OF VERMIN OF ALL DESCRIPTIONS.

We have prepared numerous useful Ointments and Solutions for combating this evil. The following is a brief selection :—

MERCURIAL POWDER, in dredgers containing diluted Ammoniated Mercurial Powder, for applying to the skin. Per dozen 18/-.

This powder is also used in the form of Sachets for wearing back and front. The Mercury in this case operates by its slow evaporation, thereby fumigating the parts by which it is applied. Sachets per dozen 12/-.

MOSKITIN CREAM.—An Ointment containing a blend of numerous Essential Oils similar to the well-known "Moskitin" in liquid form. Collapsible tubes are rather more convenient for carrying than liquids. Per dozen 6/- and 12/-.

PETROLEUM INSECTICIDE.—An effective preparation for removing lice, fleas, flies, &c., both destroying them and preventing their further attack, and thereby acting as a prophylactic in many forms of infective disease—typhoid, typhus, diarrhœa, consumption, &c. This can be used like ordinary soap for washing purposes. If a little be dried into the clothes, vermin will not approach clothes thus treated. A similar effect is procured by rubbing a little of the insecticide over the skin. Large tins, per dozen 12/-.

SULPHUR DREDGERS.—Sulphur is an invaluable insecticide, warding off all forms of vermin. The method of use is to dust into the creases of the clothes and to apply to the skin where necessary. Per dozen 8/-.

STAVESACRE OINTMENT.—A standard remedy for nits, which has the reputation for not only removing the vermin, but also killing the ova. Per dozen collapsible tubes 24/-

FOR PREVENTING POISONING BY GAS.

RESPIRATORS.—Form I.–Khaki-coloured gauze and wool pads impregnated with Sodium Thiosulphate. Per doz. 12/-

Form II.—Bag-shaped, of flannel, to fit over the nose and mouth, with a supply of impregnated wool. Per dozen, 12/-.

Form III.—Enclosing the face entirely, with mica slip for eyes. Per dozen 36/-.

Form IV.—Official form. Of cotton waste impregnated, enclosed in netting. Per dozen 24/-.

GOGGLES.—Fitted with glass or with non-inflammable transparent material. Prices each 3/- and 4/-.

LANOLIN CREAM.—It has been suggested to rub over the eyes, nose, and lips with this preparation to form a protective covering. ***It is strongly advised that this preparation should be used in conjunction with all Thiosulphate respirators.*** Dozen 24/-.

We are making a special feature of the manufacture of ORGANIC CHEMICALS hitherto obtained from Germany, and would welcome enquiries.

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